

Fewer Boll Weevils Overwintering in Seven Cotton States

Highest Count in USDA Survey Found in Northeast Louisiana

WASHINGTON—Fewer boll weevils took cover in woods trash near cotton fields this winter than last in seven cotton-producing states, according to a U.S. Department of Agriculture survey. The number that survives the winter, combined with weather conditions during the early part of the cotton fruiting period, will determine this insect's potential for damage to the 1959 cotton crop. Lowest average counts for an area were found in south Georgia—145 weevils per acre—and highest in northeastern Louisiana—5,756 per acre.

Summaries of findings by cooperating state and federal workers in North Carolina, South Carolina, Virginia, Georgia, Mississippi, Tennessee and Louisiana are carried in the Cooperative Economic Insect Report, published by USDA's Agricultural Research Service. Sample counts of live boll weevils in woods trash near cotton fields were made last fall.

South-central South Carolina trash contained an average of 995 live weevils per acre as compared with 3,978 (Turn to **BOLL WEEVIL**, page 17)

Wilson & Toomer, Smith-Douglass End Merger Negotiations

NORFOLK—Merger negotiations between Smith-Douglass Co. and Wilson & Toomer Fertilizer Co., first announced last fall (page 1, Oct. 6 issue of Croplife), have now been terminated.

Agreement could not be made on terms satisfactory to both boards of directors. Further elaboration was not made in a joint statement issued by Willard Ashburn, president of Smith-Douglass and Wallace Hicks, president of Wilson & Toomer.

What's New In Fertilizers, Operating Economics Discussed At Texas Tech Conference

LUBBOCK, TEXAS—More than 300 farm chemical dealers, manufacturing representatives and extension men attended the sixth annual Agricultural Chemical Conference at Texas Technological College here Feb. 11-12 to hear about what's new and what's better in fertilizers and operating economics.

The conference was one of our most successful with speakers, dealers and farm operators from seven

Profit Potential of Fertilizer Use Stressed At Midwest Agronomy-Industry Meeting

By LAWRENCE A. LONG
Editor of Croplife

CHICAGO—An eloquent plea for the fertilizer industry to make better business men out of its dealers; a first-hand report of recent advancements made in Russian agriculture; the premier showing of a new grassland pasture motion picture, and reports on crop yields in a number of states featured the program of the 11th annual joint meeting of midwestern college agronomists with the fertilizer industry here Feb. 12-13. Headquarters for the convention was the Edgewater Beach Hotel.

A record crowd of some 700 was registered for the two-day event, according to Zenas H. Beers, Midwest

regional director of the National Plant Food Institute, sponsor of the meeting. The group was composed of representatives of the fertilizer industry from a wide area of the U.S. for the most part, in addition to agronomists and soils scientists from land grant colleges throughout the Midwest.

Reports from agronomists were given covering states of Kentucky, Nebraska, Minnesota, North Dakota and Illinois. All indicated that the amounts of fertilizer used on key crops in these areas could be increased greatly and add income to the farmer.

Dr. E. C. Doll, University of Kentucky, reported that hay yields were

boosted 5% tons an acre over a three-year period when legume-grass pastures received a heavy application of phosphate-potash fertilizer at seeding time and an annual top-dressing each spring. He placed special emphasis on the importance of proper fertilization at seeding time. "The success or failure of a seeding may be dependent upon the fertilizer treatment," he said. "This is particularly true in areas where freezing and thawing result in considerable heaving."

Dr. Harold F. Rhoades, University of Nebraska, said that winter wheat yields can be increased profitably by top-dressing the crop with nitrogen. A higher protein content for the grain has been generally obtained from spring applications.

That farmers could use profitably much greater amounts of fertilizer was emphasized by the speaker. They could use twice as much nitrogen and about eight times more phosphate than they now use, he declared. Some movement in this direction has been noted in that the 232,000 tons of fertilizer used in Nebraska in 1958 was 66,000 tons more than that of the previous year.

Discussing research with minor elements, Dr. Rhoades reported that in zinc deficient fields, corn and field beans are severely affected. Sorghum suffers less on the same fields. Sorghum, soybeans and field beans suffer noticeably from iron deficiency in scattered fields.

"Many farmers are applying fertilizer containing zinc at rates of 10 to 20 lb. an acre to correct zinc deficiency," he said. (Turn to **MIDWEST MEETING**, page 4)

BUSINESS CONSULTANT SAYS:

Strong Dealer Organization Vital to Fertilizer Industry

CHICAGO—A much more effective distributive system is imperative for the fertilizer industry if plant food sales are ever to reach their potential, according to F. E. Hartzler, business consultant of Kansas State Teachers College, Emporia. In his talk before representatives of the fertilizer industry and Midwestern agronomists here Feb. 13, he said that fertilizer sales can no more flourish without a strong dealer organization than can an ear of corn grow directly out of the roots of a plant without a stalk.

"The fertilizer industry, like any other, must depend upon dealers to move its merchandise," Mr. Hartzler said. "This is of primary importance. It is not important that your dealers are small business," he told the fertilizer men present. "Three times as much merchandise is

moved by firms with less than three employees as is moved by firms with more than 50 employees," he added.

Mr. Hartzler said that 66% of all farm equipment is sold in towns of less than 5,000 population and that 70% of all farm equipment is sold by firms with less than nine employees. "Yet the farm equipment industry for years has had a fine training program for dealers."

The fertilizer industry should be ready to make a study to determine the practices followed by its best dealers, the speaker stressed. "With the information from this study, you will be ready to set up standards for measuring business results followed by a standard operating procedures manual and specific training programs. This, however, is 10 years away.

"Right now you have other and more basic chores to do. Dealers need accounting training. They need a standard set of books that are simple and adequate. Those of a successful dealer should be used—one with a sound knowledge of accounting.

"The industry needs a good basic sales school. Not one that is going to work miracles tomorrow, but one that will provide a sound simple guide to elementary sales management for

(Turn to **DEALER**, page 5)

NAC Sets Dates For 26th Annual Meeting

WASHINGTON—The 26th annual meeting of the National Agricultural Chemicals Assn. will be held at the French Lick-Sheraton Hotel, French Lick, Ind., Oct. 21-23, announced Lea S. Hitchner, executive secretary of the association.

Plaintiffs List Points of DDT Spray Trial Appeal

WASHINGTON—"DDT Trial" plaintiffs, who failed in court to stop mass aerial sprayings, have appealed their case on nine separate points. The fourteen Long Island, N.Y. residents filed their appeal with the U.S. Court Oct. 28, but it was not known until recently on what points the plaintiffs made their plea.

Defendants in the case are Secretary of Agriculture Ezra Taft Benson, a U.S. Department of Agriculture official in the New York area and the former New York state secretary of agriculture and markets.

Plaintiffs are basing their appeal on grounds that testimony was incomplete and misleading during the original trial, that there was no legal authorization for the mass spraying, that while the prescribed rate of spray was one pound of

(Turn to **DDT**, page 5)

states registered," said Dr. A. W. Young, Texas Tech agronomy department head.

Capping the conference was an informal "What's New" session that revealed new chemical controls of weeds, fungus and cattle grubs.

A chlorinated benzoic acid compound—still experimental in nature—is proving to be an effective soil sterilant in killing bindweed, Dr. Allan

(Turn to **TEXAS TECH**, page 20)

Future of Fertilizer Secure, Speaker Tells Nebraska Group

LINCOLN, NEB.—“The future of fertilizer is just as secure as the future of agriculture itself,” said Dr. E. F. Frolik, associate director of the University of Nebraska's college of agriculture experiment station, to more than 900 persons at the second annual fertilizer, machinery and chemical exposition of the Nebraska Fertilizer Institute, Inc., held here recently.

Continuing, Dr. Frolik predicted that the day will come when every acre of farm land in Nebraska will be fertilized. By using simple arithmetic, he explained this by saying, “Even when land is permanently in grass and grazed by cattle, rarely is there more than 50% of the fertility elements returned to the soil. Sooner or later, this will cause a deficit situation.”

According to Leo L. Johnson, field secretary of the institute, the 900 persons in attendance far exceeded last year's total of 300.

Speaking on the trace element aspect of fertilization, Dr. Mark Weldon, extension agronomist at the university, emphasized the need of zinc on land where top soil has been removed.

“In Nebraska you are very likely to have a zinc deficiency where land has been leveled for irrigation or where top soil has been removed by wind or water erosion,” he said. “Repeated applications of zinc are probably not necessary because one simple application of zinc at a cost of not more than \$7 an acre would be good for several years.”

He noted the results of a test on zinc in a southeastern Nebraska county where an application of 7 lb. of zinc an acre boosted corn yields from 106 to 113 bu. while a 14 lb.

application increased the yields from 120 to 122 bu. Dr. Weldon then pointed out that the problem of proper placement of zinc fertilizer was important. “A 100 bu. corn crop needs only a couple of ounces of zinc and to get it in a position where the corn roots can use it is the difference between success and failure in the use of the element.”

Arlan Woltemath of the National Plant Food Institute and Jere Wise of the Spencer Chemical Co. presented a flannelgraph talk entitled “Efficiency in Corn Production.”

They pointed out that a farmer's goal should be efficient and profitable farming—not just good yields. They said that only 9% of the farms in the north central states, which includes Nebraska, fertilize either of their two most important crops at recommended rates and that 36% of the farms in the area used no fertilizer at all.

Through the course of the illustrated talk, the two urged the group to give five points special emphasis. These include:

1. Know corn production costs (most farmers underestimate the cost of production).
2. Discover crop nutrient needs such as soil tests, hunger signs and crop removal figures.
3. Keep up-to-date on cropping practices.
4. Aim for profits, not yields.
5. Use treated and check strips.

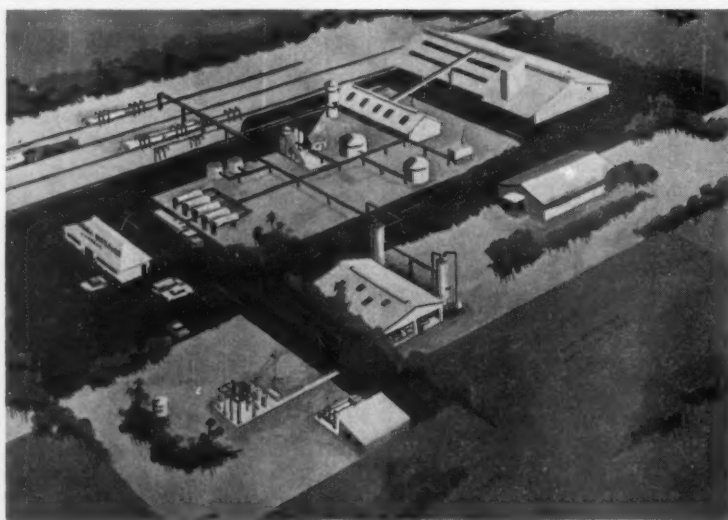
Thirty-two different firms, using 59 display booths showed recent advancements in machinery, chemicals and fertilizers, said Mr. Johnson.

At the annual business meeting of the Nebraska Fertilizer Institute, Frank Gallup, Alda Grain Co., Inc., Alda, Neb., and Alan Plantz, Hastings Seed & Supply, Hastings, Neb., were elected to the board of directors, Mr. Johnson reported.

Michigan Chemical Net Income Declines

SAINT LOUIS, MICH.—Michigan Chemical Corp. reported net sales of \$9,305,000 for 1958, only slightly under its all-time record of \$9,571,000 in 1957. Profits, however, were seriously affected by a strike, by the closing of the corporation's DDT business and by a curtailment in government rare earth production.

Net income for the year amounted to \$368,000 against \$753,000 for 1957 or a 1958 earning of 51¢ a share on the average number of shares outstanding compared to \$1.09 for the previous year.



FLORIDA NITROGEN PLANT—Shown above is an artist's sketch of the \$3 million Florida Nitrogen Co. plant to be built near Tampa as a subsidiary of Southern Nitrogen Co. of Savannah. A story of the new plant and of expansion at the Savannah plant appeared on page 26 of the Feb. 16 issue of Croplife.

Profits Can be Upped, Young Farmers Told

SALT LAKE CITY—Utah's young farmers were given the path of higher farm crop profits—commercial fertilizer and modern weed and insect control.

Dr. Arvil Stark, director of agricultural research and information for Wasatch Chemical Co., told the Utah State Young Farmers Assn. that profits could be nearly doubled by using new commercial methods. The young farmers were gathered for their 17th annual convention here.

“If farmers would utilize modern fertilizers and farm chemicals they could hit higher production an acre in almost all types of crops,” Dr. Stark declared. “Last year sugar beet production in Utah hit an average harvest of 16 tons an acre. During the same period in Idaho, an average of 28 tons an acre was harvested.”

“Farmers are making only \$73 profit on these 16 tons produced, when they could be making a profit of \$247,” he added. The \$247 was based on profits made by Idaho farmers during 1958.

“Alfalfa crops are also causing Utah farmers to lose money each year. In 1958 farmers produced approximately two and a half tons an acre,” Dr. Stark continued. “If proper care was taken these same farmers could raise alfalfa to produce six tons an acre and would increase their profits from \$16 to \$96 on the six-ton yield.”

He urged the young farmers to streamline their operations to get top profits out of farming.

The two-day convention wound up with election of officers.

Eight Firms Join Aircraft Association

FRESNO, CAL.—Eight firms have joined the Agricultural Aircraft Assn., Inc.—four as regular members and four as sustaining members.

Included in the first group are the California Insecticide Co., Lancaster, represented by Zack Monroe; the Growers Aerial Service, Imperial, represented by Norman E. Stanley; the Machado Flying Service, Santa Maria, represented by A. J. Machado, and Mason and Miller, Sacramento, represented by Jay Mason.

The four sustaining members include the Austin Aviation Supply Inc., Bakersfield, represented by William D. Austin; Call Air Inc., Afton, Wyo., represented by C. J. Petersen; the Grumman Aircraft Engineering Corp., Bethpage, Long Island, N.Y., represented by C. A. (Randy) Moore, and the Sellers Aviation, Inc., Bakersfield, represented by Chuck Sellers.

Plan for Establishing Pest Control Districts Proposed in Colorado

DENVER—A bill enabling farmers and ranchers of any community to join forces to fight insects, weeds or plant diseases has been introduced in the Colorado Legislature by Rep. Forrest Burns, a farmer from Lyncan.

If a similar law had been in effect last year, Mr. Burns said, grasshopper damage might have been minimized because a quicker start could have been made in the fight.

The measure would allow farmers and ranchers to form districts of any size to eradicate the pests. Action for a district could be initiated by filing of petitions, signed by 25% of the landowners, with the county commissioners. Before a district could be set up, however, 66% of the landowners voting on it would have to approve.

Property within the district could be assessed up to 2% of its taxable valuation annually to pay the cost of the program.

Under Mr. Burns' plan, the state commissioner of agriculture or county inspectors, or their deputies, could enter any property within or adjacent to the district “for the purpose of inspecting, combatting or eradicating” the pests. The entry, however, would have to be made “during reasonable business hours.”

The State Highway Dept., railroads, ditch companies and other organizations with rights-of-way in a county would be required to keep areas under their control free of the pests.

County commissioners would be empowered to appoint a special “county pest inspector” when conditions warrant. The state commissioner of agriculture also would be required to notify other state agencies who might participate in the fight against the pests and secure their cooperation.



P. L. Lonnecker

E. W. Segebrecht

Thompson-Hayward Announces Promotions

KANSAS CITY—The appointment of Paul L. Lonnecker as vice president-general sales manager of Thompson-Hayward Chemical Co. has been announced by the firm's president, R. S. Thompson. Mr. Lonnecker began his service with Thompson-Hayward 18 years ago and has held a variety of sales and administrative positions. A graduate of the University of Kansas, Mr. Lonnecker resides in Kansas City.

Mr. Thompson also announced the appointment of Ervin W. Segebrecht as administrative assistant to the executive vice president and to the vice president-sales. Mr. Segebrecht was formerly associated with Spencer Chemical Co., Kansas City, Mo., and with Armour Chemical Division in Chicago and New York. Mr. Segebrecht is a graduate of Kansas State College and resides in Prairie Village, Kansas.

RED SCALE SEARCH

SACRAMENTO — Glenn County supervisors have authorized a 30-day survey of citrus groves after a delegation of growers reported red scale is causing serious injury to the orange crop and threatens to spread to other trees.

Plans Made for Tennessee Soil Fertility Program

NASHVILLE—Participants in the University of Tennessee's Soil Fertility Demonstration Program met recently to plan the final details of the program which is being conducted under the direction of Dr. W. D. Bishop, extension agronomist.

The five counties that will participate in 1959 are Gibson, Greene, Lawrence, Monroe and Overton. There were 26 members of the extension service present including district agents, crop specialists, county agents, associate and assistant agents. The National Plant Food Institute area representative was also present.

Dr. Bishop advised the group that the programs should be planned by individual counties and executed so that the maximum effort would be exerted this fall on an intensive soil testing and fertility program.

Joe Burns, extension pasture specialist, discussed the important factors that must be considered in planning successful demonstrations. Among these were site selection, labeling plots, publicity and recording results.

Joe Matthews, extension soil testing, reviewed the final drafts of the slides that are to be prepared by the Institute for each county to use in its publicity programs. He also pointed out the importance of the soil test in the demonstration program.

The group then toured the soil testing laboratory facilities where it was pointed out that the flow of samples could be increased to 2,500 samples per day without sacrificing the quality of the procedures used.

The Tennessee program is being supported in part by a \$2,000 grant from the Institute.

Illinois Agricultural Industries Forum Discusses Roles of Colleges, Business

URBANA, ILL.—Colleges and business must work together to meet the challenge of insuring proper development of people for the agricultural service and food industries.

That's what J. D. Sykes, vice president of the Ralston Purina Co., St. Louis, told more than 600 agricultural businessmen and industry leaders at the first Agricultural Industries Forum last week at the University of Illinois.

Agriculture has become agribusiness, Mr. Sykes pointed out. Farming and agriculture have changed to the point that they involve principles of business management as well as principles of agricultural production. That means that agricultural college students need training in the business aspects of agriculture as well as in the modern methods of production.

Some agricultural colleges have recognized this need and have changed their curricula to accommodate this broad concept of agriculture, he said. This is progress. In time, all agricultural college curricula will embrace both the business and production aspects of the field.

Harold Halcrow, head of the department of agricultural economics at the University of Illinois, told the forum visitors that the challenge to agricultural industries by the farm of tomorrow is one of spectacular change.

Productivity is double what it was just before World War II, Dr. Halcrow pointed out, and the rate of change seems to be speeding up. Productivity per man changes faster in one year now than it did in any decade prior to 1940. Agricultural output as a whole is each year increasing more rapidly than ever before.

Capital assets must be increased more rapidly than ever before to keep up with the changes in technology, he said. The farm production plant is expanding, farms are declining in numbers and increasing in output per farm. Farms are becoming more specialized and are using much more capital per worker. New technologies are being adopted at a rapid rate.

The challenge to agricultural industries is one of growth to efficiently handle the larger product coming out of agriculture, Dr. Halcrow said. It is also a challenge to provide the processing facilities and service demanded by our growing population and our expanding economy.

Dr. Halcrow also pointed out that the agricultural industry must provide economic opportunity for farm young people who can no longer be employed profitably in farm production.

Since agriculture needs more capital and service each year, there is a challenge to provide this capital in an amount and form best adapted to modern production techniques. Agriculture is becoming more specialized and is making use of new and improved machines. Farmers are buying more commercial products such as fertilizers, sprays, feeds, fuels and other products. The challenge to the industries supplying agriculture is one of not only meeting these demands but of helping to guide and shape agricultural development through sound consulting services, education and finance.

In another forum session on farm supplies and equipment, D. W. Wilken pointed out to the industry people in attendance that farmers' cash costs have gone up greatly in recent years as they have bought more of the resources they use in farming from non-farm sources, and as prices of these goods and services have increased.

Prof. Wilken, farm management extension specialist at the University

of Illinois College of Agriculture, pointed out that farm costs have gone up 33% since 1951 while income has stayed the same on farms of 5,000 record-keepers on Illinois farms in 89 counties. Farms have increased in size, and shifts are being made to more acres of high-cash crops and larger volumes of cattle and hogs. Lower prices have offset the effect of the production increase in many farms, indicating that greater efficiencies still are needed.

Farmers now use more than twice as much purchased material per unit of production as they did 20 years ago. However, labor input per unit of farm output in the U.S. has decreased by one half and cropland by one third since 1940.

Greatest cost increase on 210 Illi-

nois record-keeping farms between 1951 and 1957 was in machinery, buildings and taxes, Prof. Wilken said, while the least increase was in labor. Total value of all farm production stayed the same, even though the index of prices received for commodities sold by Illinois farmers went down 18 points. Physical production went up, but it sold at lower prices.

It is evident from this that many commercial farmers are running at a fast pace just trying to keep ahead, the agricultural economist pointed out. They made shifts in the organization of resources on their farms. These shifts greatly influenced their buying of the goods and services used in production.

Product specialization has become more evident. The law of comparative advantage says that each farmer tends to produce what he can sell to his greatest advantage.

Some farmers have been slow to recognize the changes that are taking place on farms. They are gearing

their capital expenditures to the past or present rather than to the future. Some farmers who do not like higher cash costs each year, refer to costs as a necessary evil. Yet such costs are hard to cut drastically without also reducing output, Prof. Wilken says.

It may be good business for trades-people to help build a sound market for their merchandise, Prof. Wilken said. They can do it by providing skilled personnel to help the farmer make the right decisions.

In another discussion on prospects in cropping practices and materials handling, John Wills told the visitors that farms for many years have been taking on the characteristics of non-farm production units.

Dr. Wills, professor of farm management at Illinois, pointed out some of the differences that exist between farm and industrial production units. Farm operations must be done in

(Turn to FORUM, page 19)

NOTICE ANYTHING DIFFERENT ABOUT THESE MULTIWALLS

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Bemis SINGLE GUSSET Multiwalls are being used by the Davison Chemical Company, Division of W. R. Grace & Company, Baltimore, Maryland. The single gusset bags have good stacking qualities. They palletize well, and the filled pallets are stacked three high. In addition, these new Bemis multiwalls give improved performance on the packer.

Yes, they are different.

For one thing, they are Bemis SINGLE GUSSET Sewn Valve Multiwalls . . . another Bemis first. (They stack so uniformly, you have to look closely to notice the single gusset construction.)

But the BIG differences are the ones you will see in the packing performance where you get uniform filling, steadier production and greater economy. Bemis SINGLE GUSSET Multiwalls provide these important

time- and labor-saving benefits:

1. The flat tube side, opposite the valve, provides more room for the product flow during filling.
2. The additional space in the corner helps prevent blowout.
3. Fertilizer does not back up and clog the filler spout.

And still another important point—the additional usable space created by the flat tube corner often permits the use of a shorter bag, which would save you money.



MIDWEST MEETING

(Continued from page 1)

ciency on lands that have been leveled for irrigation," he said.

Modern research can help soil scientists predict the probable number of rainless days in a crop growing season in a given area, and thus estimate the crop responses to fertilizer, Dr. George R. Blake of the University of Minnesota soils department told the group. He said the key to this development is increased knowledge of water storage in the soil, the movement of water and its use by crops.

Dr. Blake credited this breakthrough in knowledge to research over the years by USDA, Johns Hopkins University, the Rothamsted Experiment Station in England, the University of Tennessee, the TVA and the University of Minnesota.

Recent research advances, he said, "have placed at our disposal important tools for incorporating simultaneously fertilizer and moisture factors into expected yield results.

"We now can quite accurately estimate from weather records the actual amount of moisture leaving the earth by evaporation and transpiration. By combining this with actual rainfall records and with runoff estimates, we can specify the level of soil moisture at a given time.

"We can also go back in time and re-analyze weather data and thus determine soil moisture conditions in past years and compare this data with cropping and yield histories and with fertilizer response."

Dr. Blake said that current researches are "just as important to agriculture as moon rocketry is to national security."

Dr. M. B. Russell, head of the agronomy department, University of Illinois, reported that heavy fertilization over the past four years has boosted corn yields nearly 100 bu. an acre on experimental fields cropped continuously to corn for 83 years on the Morrow Plots at Urbana.

He said these continuous corn plots had received no plant food until 1955. In that year one quarter of each plot was limed, and received nitrogen, phosphate and potash fertilizer. The

1958 corn yield was 130 bu. an acre on the fertilized areas, compared to 32 bu. on the plots that had received no treatment over the 83-year period. Dr. Russell pointed out that this 130-bu. yield was the cumulative result of repeated fertilizer treatments since 1955.

"The plant food applications were sufficiently high to give reasonable assurance that lack of nutrients would not limit yields," he said. "It is not to be inferred that the rates actually used are recommended as 'practical' or 'economical'."

Dr. Russell said that other Illinois research indicates that soil management practices which boost crop yields, also increase the efficiency of water use. Corn yields of 125 bu. an acre have been grown with only five to seven inches of moisture, by eliminating losses of water by evaporation, he said.

Corn yields go up when the plant population is increased on high-fertility soils that receive plant food treatments, Dr. C. J. Overdahl, University of Minnesota extension soils specialist, reported. He based his statement on a study of results in the Minnesota X-Tra Yield, X-Tra Profit Corn Contest.

Dr. Overdahl said that corn yields averaged 117 bu. an acre over a six-year period when the population exceeded 18,000 plants an acre on fields that were fertilized. This was a 22.3-bu. increase compared with unfertilized check plots with the same plant population, he calculated.

From 50 to 60% of the farmers participating in the contest showed returns ranging from \$10.31 to \$16.37 an acre over the cost of the fertilizer, the speaker said.

"The contest was designed primarily to demonstrate yield increases through the proper use of fertilizer," he said. "A new phase of the contest, X-Tra Profit, was introduced in 1958, to place emphasis on crop producing efficiency."

Well-fertilized crops use soil moisture more efficiently to grow higher yields than do lower-producing crops on less fertile soil, Dr. Ralph A. Young, North Dakota Agricultural

College agronomist, said in his report.

Dr. Young reported that wheat fertilized with both nitrogen and phosphate averaged 7.7 more bushels an acre than wheat receiving phosphate alone, or no fertilizer at all, in 29 field trials over a six-year period. Yet at harvest, the top five or six inches of well-fertilized soil contained only six-tenths of an inch less moisture than did the low fertility plots.

Tests indicate that North Dakota farms have not been maintaining soil fertility sufficient for maximum yields, Dr. Young said. Nitrogen is particularly deficient, except after fallow.

Profitable response to phosphate fertilizer on small grains has been obtained in 80% of field trials. Drill applications of concentrated superphosphate are superior to broadcast applications for small grains, he said.

In his word-and-picture description of Soviet agriculture, Dr. L. B. Nelson, U.S. Department of Agriculture specialist in soils and water, told the assembly that the Russians have changed from a largely primitive agriculture to one based on technology within just a few years. Dr. Nelson's observations were based on what he saw on a 10,000-mile tour throughout the Soviet Union last summer as a member of an exchange team which was permitted to travel and observe agriculture on a relatively unrestricted basis. He and other members of the agricultural delegation visited the most important producing areas, collective and state farms, research institutes and experiment stations.

There are many contrasts between Russian methods and those commonly used in the U.S., he observed. Farming there is much closer to experimental work than it is in the U.S. He also indicated that once a course is decided by a multiplicity of commissars and committees of various levels, it is virtually impossible to change it, right or wrong.

Dr. Nelson said that the way these basic decisions are made there is every bit as much chance of their being in error as there is in being correct. Entire farms of huge acreages are frequently planted to crops without adequate knowledge of whether it will work

out, but it doesn't seem to worry the agricultural leaders.

From 30% to 50% of the total fertilizer tonnage is placed by plane. Ground applicators are crude affairs. The Russians apparently take pride in making enormously ponderous machines regardless of efficiency and completely without consideration of economics.

Very little fertilizer mixing is done in factories as is the custom in the U.S. Instead, the separate materials are brought to the huge farms and mixed or blended there.

The strong urge to achieve a higher, more efficient, diversified production is evident everywhere in Russia, the speaker said. Great emphasis is being given to agricultural research and fertilizer production is being increased.

The Russians have brought about 75 million acres of new land into crop production in recent years, largely through breaking virgin prairies, he said. They are also actively developing new irrigation projects and are draining wet lands. This is all part of a concerted effort to increase farm production.

Signs on roadsides and farms urge "Beat America on production of meat, milk, and butter," he said. The huge new land development apparently is aimed toward supplying the needs for wheat in order to release the more valuable lands such as the Ukraine for corn and livestock production, he indicated.

Mineral fertilizers are playing an increasingly important role in Soviet agriculture. Practically all collective and state farms visited reported substantial use of fertilizers and extensive soil fertility research.

In 1955, about 10.5 million tons of fertilizer were used in Russia, as compared to 22 million in America, he reported. Soviet agricultural specialists frequently stated that fertilizer production was being increased. Also they apparently are depending on greater fertilizer use to help realize production goals set up for the future.

"Soil testing appeared to have a prominent place in farm programs," he said. "We were told, for example, that the Ukraine alone had 750 soil testing laboratories."

The speaker also observed that all

SUGGESTED MINIMUM FERTILIZER GRADE NEEDS OF THE MIDWEST STATES

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4:1:2:	:	16-4-8:	:	:	:	:	16-4-8:	:	:	:	:	:	:

RECOMMENDED GRADE NEEDS—Shown above are state agronomists' suggested minimum fertilizer grade needs of Midwest states for the fiscal year beginning July 1. The chart was presented at the recent Midwest Agronomist-Fertilizer Industry Conference held in Chicago. In connection with the recommendations the agronomists

note that the production of higher grades of the suggested ratios is encouraged. Solutions of similar ratios are equally acceptable. The following changes in grades and ratios have been suggested by the agronomists for future consideration: 0-1-3 (0-10-30) to 0-1-4 (0-10-40) and 1-3-9 (3-9-27) to 1-2-6 (5-10-30) or 1-2-8 (4-8-32).

farms in the Soviet Union are large. Acreages commonly range from 2,000 to 50,000 or more per farm. Approximately 55% of the Soviet population is on farms, as compared to about 13% in the U.S. "We gained the impression that many more people were on farms than were needed," he said.

Probably the greatest deterrents to Russian farm progress, however, are lack of incentive and private initiative which we accept as commonplace among our better farmers. The income and standard of living on the farm are low.

Laboratory research generally seemed of fairly high quality. Laboratories were equipped about like ours, except that some institutes had considerable quantities of specialized equipment.

"Most noticeable was the large number of our scientific books and research journals translated into Russian and in the hands of working scientists. The Soviet scientist usually was aware of our latest advances in his immediate field. He usually assumed that we had translations of his papers, which, of course, is not the case, even though Soviet agricultural research journals are sent to this country," Dr. Nelson commented.

The quality of field and greenhouse research "is entirely another matter." The Soviets generally have no appreciation of the value of modern experimental design. Extension service has no place in the Soviet Union, either. Its function is entirely replaced by decisions made at various governmental and operating levels. Once a decision is made, it is ably carried out by the chairmen and managers of the collective and state farms. This works fine when the decision is a correct one, but questionable practices frequently become entrenched and are difficult to replace.

Each farm has one or more agronomists or engineers on its staff. These people, frequently women, appeared to be well qualified individuals having a broad working knowledge of the field.

Dr. Nelson reported that the Soviets permitted members of the visiting delegation to see practically everything they wished and treated them with extreme courtesy. Most Russian people, he said, seemed very curious about America and Americans.

The new NPFI sound-color movie was given its premier showing at the Chicago convention. Titled "Cash in on Grass," the picture presented a how-to-do-it story on the establishment of pastures and grassland areas, pointing out both the economics and technique of such operations.

Welcoming remarks were made by Mr. Beers; Dr. Russell Coleman, executive vice president, NPFI, Washington, D.C., and Richard E. Bennett, NPFI president and president of Farm Fertilizers, Inc., Omaha. Brief reports were presented by J. R. Gut-tay, E. R. Schumann and A. D. Woltemath, NPFI Midwest district representatives.

DDT

(Continued from page 1)

DDT per acre multiple aerial passes actually applied more than one pound and other points.

Government attorneys will probably base their defense on jurisdictional grounds—that the secretary of agriculture and his agents cannot be sued outside Washington, D.C. The case will be heard before the U.S. Court of Appeals for the Second Circuit, New York City, in May.

The fourteen plaintiffs lost the original case June 23, 1958, when Federal Judge Walter Bruchhausen handed down his decision that mass sprayings are an exercise of the state's police power.

ARKANSAS FERTILIZER SALES

LITTLE ROCK, ARK.—Arkansas fertilizer tonnage sales during January, 1959, amounted to 8,456 tons, reported the Arkansas State Plant Board.

DEALER

(Continued from page 1)

its dealers. I know of no business or industry today that does not lean heavily on trained men and training programs."

Mr. Hartzler said the fertilizer industry could get help in dealer training from the state supervisor of business education and the supervisor for vocational agriculture in the various states. He pointed out that for the agricultural end of the business, the agricultural colleges are the place to go, but for the sales teaching, the business and vocational supervisors are the men to consult. He said further:

"Probably this is what they will recommend: Call together 10 of your best dealers; plan for an all-day meeting. Sit down with them and find out what they do and how

they do it. Ask them what their major problems are and how they solve them. Then ask them what they would like to have in a two-day school. Find out who they would recommend to each session of such a school.

"Then the state supervisor will talk with the men who have been selected to teach. He will show them how to teach. Teaching is this man's business. He will time and arrange your program.

"Then hold a dry run. Bring back your ten dealers and ask them if this is what they want. When they have approved the program, you are ready to take it to the dealers generally," he declared.

BOLLWORM LITERATURE

COLLEGE STATION, TEXAS—"Ways to Fight the Pink Bollworm in Texas" is the title of a leaflet released by the Texas Agricultural Extension Service.

New Liquid Plant Set To Open in Iowa

ELDORA, IOWA—The Crosley Grow-Mor Co., a liquid fertilizer plant, is scheduled to open here this month, according to Beecher Crosley of the Crosley Farm Store. Dean Handsaker and Marion G. Gilbreath, both of Nevada, Iowa, will be in charge of the firm.

The company plans to serve the four county area of Grundy, Franklin, Butler and Hardin, and be ready to operate for spring delivery.

WASHINGTON MEETING

MT. VERNON, WASH.—The Western Washington Fertilizer Dealers Day will be held Feb. 24 at the north-west Washington Experiment Station here, announced the Pacific Northwest Plant Food Assn. A complete afternoon program of speakers has been lined up. A banquet will be held on that evening, capping the proceedings.

The Measure of Quality

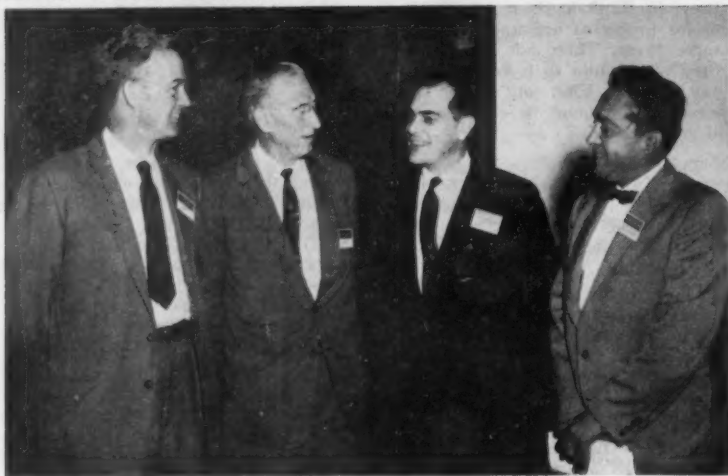


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NEW MEXICO HUDDLE—Opening speakers at the second annual New Mexico Agricultural Chemical Conference exchange ideas. Left to right are Dr. J. G. Watts, head, Department of Botany and Entomology, New Mexico State University; A. S. Curry, associate director, Agricultural Experiment Station, New Mexico State University; Dr. Robert L. Beacher, Southwest regional director of the National Plant Food Institute, and Joe Diaz, Shell Chemical Co.

Many Factors Affect Response From Fertilization, New Mexico Specialists Tell Conference

STATE COLLEGE, N.M.—“Ever since the German chemist, Liebig, advanced his theory, that ‘crops on the field diminish or increase in exact proportion to the diminution or increase of the mineral substance conveyed to them by nature,’ the farmer has exerted increased pressure on the soil analyst or commercial dealer to come up with the ‘right answers’ to his fertility problems.”

“Unfortunately,” V. H. Gledhill, extension soils specialist at New Mexico State University says, “the right answers are not easy to come by and frequently are not found. The difficulties stem not from the analysis, but from the interpretation of the analysis of soils.”

Mr. Gledhill spoke at the second annual New Mexico Agricultural Chemicals Conference here. He reminded farmers and fertilizer dealers at the meeting that several other factors, in addition to soil test results, must be considered in determining the amount and kind of fertilizer that will more economically and efficiently supply the needs for a specific crop. He recommended that they study the fertilizer level as revealed by the soil test, soil texture, salt content, crop to be grown, past crops and yields, past fertilization and management practices and quality and quantity of water available.

Dr. P. J. Leyendecker, assistant dean of agriculture and head of the university's agricultural services department, said his department had conducted more than 175 on-farm fertilizer demonstrations in New Mexico from 1954 to 1958.

He said, “Fertilizer responses have varied from county to county depending upon soil types, climatic conditions, crop, soil nutrient level and previous crop history. Nitrogen and phosphorus economically increased yields where the soil nutrient levels were such that a fertilizer response would normally be expected.”

He pointed out, “Fertilizer should not be considered a magic elixir which will solve all production ills. Many other factors such as variety, length of growing season, previous crop history, irrigation frequency, etc., influence maximum economic yields.”

Summarizing insect investigations at the New Mexico State University Experiment Station, Stuart R. Race, assistant professor of entomology, said spotted alfalfa aphids were effectively controlled by experimental

systemic insecticides, Thimet and Disyston. Mr. Race said the insecticides were applied as granules to two and three year old alfalfa plants at the rate of one pound per acre. He said the aphid parasites and predators did not appear to be adversely affected by these treatments.

The same chemicals were also used in cotton insect investigations; Thimet and Disyston gave good control of early season thrips, the entomologist said.

Pima S-1 grown from cottonseed treated with these two systemic insecticides and given three post-emergence spray applications of Toxaphene plus DDT and Toxaphene plus Parathion yielded better than untreated plots. Malathion plus DDT, Toxaphene plus DDT, Toxaphene plus Parathion and Endrin plus Methyl Parathion applied as sprays effectively controlled lygus bugs, stink bugs, and flea hoppers for periods up to two weeks after application.

John J. Durkin, extension entomologist at NMSU, told the group that Co-Ral and Trolene, new organic phosphate pesticides have proved lethal to cattle grubs. Co-Ral sprays are also effective against horn flies, screw-worms, lice and cattle ticks. Cost of the material runs about 80 to 95¢ per animal, Dr. Durkin said.

Dr. G. L. Neilsen, survey entomologist with division of plant industry, pointed out that New Mexico can get the greatest benefit from the newly initiated cooperative insect service if everyone qualified will do his part. He told producers at the conference, “If you have an insect that you are unable to identify, take or send it to your county agent or the State Department of Agriculture at State College. This will help the survey entomologist maintain a better overall picture of insect conditions within the state and assure prompt detection of newly introduced pests.”

About 100 producers and representatives of chemical concerns attended the conference.

COUNTY AGENT AWARD

NEW YORK—Paul A. Lutz was awarded the county agent award at the recent Northeastern Weed Control Conference here. Mr. Lutz, who is assistant county agricultural agent for Schenectady County, conducted chemical weed control demonstrations throughout the county for the past two years, helping to bring about the use of herbicides there, the citation read.

Hoppers Pose Serious Threat in South Dakota

BROOKINGS, S.D.—Grasshopper activity has been on the increase in South Dakota and the outlook for 1959 is serious, says William Hantsbarger, entomologist for the Agricultural Extension Service at South Dakota State College.

Special surveys indicate many areas of the state have economic infestations.

The late fall season has favorably contributed to the laying of egg pods and, if the weather during the spring hatching period is at all favorable, ‘hoppers will do considerable damage to the 1959 crops. In 1958, grasshoppers are estimated to have cost South Dakota farmers and ranchers almost \$3 million.

Several areas of the state have from threatening to severe ratings, based on the surveys. The large portion of this infestation is in cropland. It is estimated that nearly one million acres of South Dakota land may have to be treated if grasshoppers are to be properly controlled.

IMC Sales Show Second Quarter Gain

CHICAGO—Net earnings of International Minerals & Chemical Corp. for the second fiscal quarter ended Dec. 31, 1958, amounted to \$739,000, or 28¢ per share on the 2,343,327 common shares outstanding. This compares with net earnings of \$885,000, or 34¢ per share for the second fiscal quarter a year ago. Earnings before taxes were \$1,026,000 compared with \$1,195,000. Second quarter sales, totaling \$23,492,000, were up slightly over the \$23,290,000 for the comparable period last year.

Sales for the first fiscal half, ended Dec. 31, 1958, were \$43,655,000 compared with \$43,843,000. Net earnings were \$701,000 compared with \$1,639,000 and earnings before taxes were \$988,000 compared with \$2,214,000.

Noting the upturn in second quarter sales, Louis Ware, chairman of the board, said that the trend is expected to accelerate in the last six months of the fiscal year as the plant food business enters the heavy shipping season.

He said that earnings for the first six months reflected higher mining costs resulting largely from shifting mining operations from mined-out areas to adjacent ore deposits. Earnings were further reduced by unusual expenses for plant expansion, by lower prices for potash and by lower shipments of phosphate, Mr. Ware said.



George O. Voss Wayne Kincaannon

STAUFFER APPOINTMENTS—Stauffer Chemical Co. has promoted George O. Voss to the position of sales manager, Southeast, agricultural chemicals division and Wayne Kincaannon has been named sales manager, Delta Area, agricultural chemicals division. Mr. Voss will be headquartered at Tampa and Mr. Kincaannon will be located at North Little Rock, Ark. Thomas A. Baker, Jr., has joined the agricultural chemicals division as a sales and technical representative. Mr. Baker will be headquartered at North Little Rock. K. Lee Sturges has been promoted to the position of assistant regional sales manager, Northwest. Mr. Sturges has been a Stauffer sales representative in Oregon and Washington for the past several years.

Texas Experiments Show Fertilizer Value

SEMINOLE, TEXAS—Fertilizing cotton is becoming an accepted method of increasing cotton yields in this area, as every test has shown that profits can be measurably increased when nitrogen and phosphorus are used.

Fertilizer usage on test farms in 1958 showed an increase of 259 lb. an acre, according to Calvin Holcomb, county agent. The tests were conducted on the W. H. Griffin farm where 60 lb. of nitrogen and 120 lb. of phosphorus were the most effective combination. The tests were a cooperative effort by the Lubbock experiment station, South Plains Fertility Committee, the Plains Cotton Growers, Inc. and the extension service.

Figuring the extra lint cotton at 30¢ a pound, the fertilizer brought the land owner a gross return of \$60.90 an acre. Also included in the tests was the use of trace elements and 26 lb. of magnesium in separate treatments, however there was not enough increase in yield to definitely indicate an actual need.

Farmers in this area are beginning to experiment with potash. And while the yield increase has not been high, the fertilizer does tend to hasten maturity.



ORTHOCIDE CONFERENCE—Delegates to the International Orthocide Conference are shown in one of their early sessions. The conference, sponsored by California Spray-Chemical Compagnie Francaise, attracted 93 delegates from 23 countries and was held in Vienna. The sixth International Orthocide Conference brought together delegates from companies specializing in protection of crops against plant diseases. Delegates exchanged scientific and practical experiences with organic fungicides. Following the pattern of the United Nations, the conference rooms were equipped for simultaneous translation of speeches in French, English, Spanish and German.

High Soil Fertility Is a Must for Large Crop Yields, Soil Test Expert Declares

RALEIGH, N.C.—"High, soil fertility is a must for high crop yields and greatest net return on a farming enterprise," says Dr. E. J. Kamprath, director, soil testing division, North Carolina Department of Agriculture.

At the recent meeting of the North Carolina Soil Science Society, Dr. Kamprath discussed the response of corn to applications of fertilizer phosphorus and potassium on soils of different fertility levels. On coastal plain soils the average response to additions of fertilizer phosphorus was 16 bu. per acre when the soil tested medium or less in this element. When the soil tested high the response to applied phosphorus amounted to 4 bu. per acre.

The picture was essentially the same on Piedmont and mountain soils in this state. On soils medium or lower in phosphate, there was an average response of 12 bu. per acre to applications of this element, but where soils were high fertilizer additions of phosphorus resulted in an increase of 4 bu. per acre.

The significant point about these data, Dr. Kamprath emphasized, was that the corn yields on soils that were high in phosphorus and to which no fertilizer phosphorus had been added immediately prior to planting were higher than the yields on those soils that were medium or lower in phosphorus but to which fertilizer phosphorus was added immediately prior to planting.

This, Dr. Kamprath said, illustrates the importance of maintaining a high level of soil fertility through the adequate and intelligent use of lime and fertilizer.

The response of corn to potassium fertilization was also discussed. On coastal plain soils in North Carolina that were medium or low in potassium additions of this element in the fertilizer prior to planting resulted in an average increase in yield of 24 bu. per acre. On soils high in potassium this increase amounted to 3 bu. per acre. On the Piedmont soils medium or lower in potassium, applications of this element resulted in an increase of 11 bu. per acre.

Here again the yield of corn on those soils the potassium level of which had been built to a high level by a sound fertilization program was greater than on those soils which were medium or low. As was the case with phosphorus, applications of potassium to soils medium or low in this element still did not result in as

much corn as was produced on those soils with a high level of potassium but to which no additional fertilizer potassium had been added immediately prior to planting.

High crop yields are synonymous with high net income, Dr. Kamprath concluded, and in North Carolina highest yields are associated with a high state of soil fertility. Because many North Carolina soils are acid and low in native fertility, a sound fertilization program is necessary to build them up to a level where fertility is no longer a limiting factor. The adequate and intelligent use of lime and fertilizer based on the results of a soil test can go a long way toward producing those profit-making yields of cash crops in the Tarheel State.

New Chemicals Help Michigan Onion Crop

EAST LANSING, MICH.—Thanks to new chemicals and techniques, Michigan onion growers earned \$1 million more in added income during 1958.

Last year, Michigan farmers produced about 9,000 acres of onions, with a crop value of \$6 million.

The new control methods, found by entomologists at the Michigan State University Agricultural Experiment Station in 1957-58, were effective in stopping the maggot worm.

Farmers have been using chemical materials to control the maggot. But as a new generation of maggots developed, the old materials no longer did their job.

These "new" tougher maggots were first spotted in 1956, in one field in the Stockbridge area near Lansing. Within one year, they had spread to

all commercial producing areas as well as home gardens.

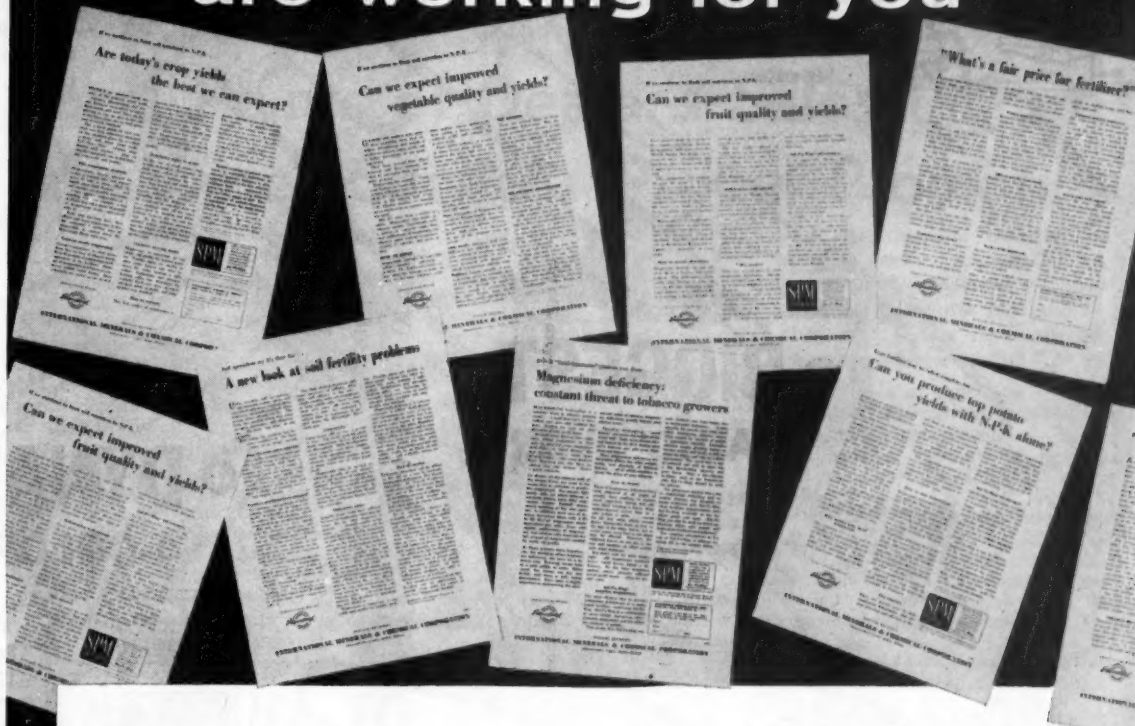
In 1957, these maggots destroyed the crops of many growers in the state. Besides losing the sale value of the crop, growers were also out from \$2,000 to \$4,000 an acre in production costs.

When left uncontrolled, the onion maggot burrows into growing onions and eats away until the onion dies.

NEW RESEARCH FARM

FORT COLLINS, COLO.—A new combination crops-and-livestock research center is taking shape on the 400-acre Ridgen Farm, southeast of Fort Collins. Roughly half the acreage will be devoted to the type of crops research previously carried out by Colorado State University on the old Agronomy Farm. Now almost surrounded by housing subdivisions—and steadily giving way to such use itself—the old farm was sold to permit purchase and development of the new block of land.

2,567,000 MESSAGES are working for you



Purdue Soil Test Head Joins Texas Firm Staff

LUBBOCK, TEXAS — Marion Baumgardner, head of the Purdue University soil testing laboratory, has accepted a similar position with the Southwest Soil Laboratories, Inc., at Lubbock.

A native Texan and graduate of Texas Technological College, Mr. Baumgardner was credited with much of the success of the soil test program at Purdue. He was also responsible for the soil testing and leaf testing kits which are well known in west Texas.

Mr. Baumgardner graduated from Texas Tech in 1950 with a B.S. degree. Later he received a master's degree from Purdue and has studied at Yale. He joined the Purdue staff in 1950.

OUTSTANDING PROFESSOR

STARKVILLE, MISS.—Dr. Joseph Bailey Edmond of Mississippi State University has been named the South's outstanding professor of horticulture for 1959. In making the announcement, the university said Dr. Edmond was chosen by the southern section of the American Society for Horticultural Science.

The story of magnesium starvation is one which needs telling and re-telling. And that's just what Sul-Po-Mag advertising does . . . tells and sells through factual, believable messages in dozens of magazines which your customers read. A few of these ads are shown above.

This year Sul-Po-Mag advertising appears regularly in magazines reaching 2,567,000 farmers and growers. These informative messages are designed to increase interest in magnesium deficiencies, help farmers and growers to better understand plant feeding problems.

Use this seal to identify your fertilizer . . . growers look for it

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Great 1959 **Hi-D** [®] AMMONIUM NITRATE program gives you 5 helping hands!

① BIGGEST OUTDOOR EVER



— with powerful four-color billboards dominating the rural scene at 710 locations in 8 key states.

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— using 67 stations to blanket 15 states with the Hi-D story for a solid 13 weeks.

④ DYNAMIC 4-COLOR ADVERTISING



— in "Farm Journal" . . . "Capper's" . . . "Progressive Farmer" . . . and "Farm & Ranch" for a whopping delivery of over 17,000,000 sales messages about Hi-D.

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The 1959 Hi-D Program

is the soundest and sellingest you ever benefited

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'Package Deal' Works Wonders For Texas Firm

The American Chemical Co. of Pecos, Texas, started as a flying service, then began selling insecticides and finally fertilizer.

"We decided it was more profitable to give the farmer a packaged deal," said C. W. Willeiter, fieldman for the firm. "Why have him buy insecticides here, then go somewhere else for his fertilizer? By working with them throughout the crop season, many customers now follow our recommendations without question."

This is a happy state of affairs for the dealer, but he must be right all the time. To insure against error, the firm hires the best entomologists available and keeps an expert plant nutritionist on the staff.

"Our entomologists work closely with farmers in the field," said Mr. Willeiter, "but they can't be everywhere at once. So I do a lot of the checking after the planes to make sure there is a good kill."

One of the hardest insects to kill is the cabbage looper, which defies nearly all chemicals when full grown. American Chemical warns farmers to start dusting or spraying early in order to hold down looper damage.

"We have also found that once an infestation of worms hit, the cheapest plan is to spray the fields regularly," said Mr. Willeiter. "The new farmer may think he is wasting money, but usually he will gain a half bale per acre by it."

The firm has pioneered fertilizer test plots in the area. These are more effective if placed on individual

(Turn to **PACKAGE DEAL**, page 16)



BILL DUNKLIN (right), in charge of fertilizer sales at Planters Fertilizer & Soy Bean Co., Pine Bluff, Ark., is shown here with **C. H. Turk**, farmer, who buys fertilizer from the firm. Mr. Turk grew two bales to the acre by following the company's recommendation. Area average was only a little more than one bale per acre.

Focal Points of Dealer's Sales Picture Are Varied Services, Proper Promotion

By **JESS BLAIR**
CropLife Special Writer

The leading fertilizer company of Pine Bluff, Ark., and perhaps in several counties, is the Planters Fertilizer & Soy Bean Co. The firm is owned by the four Dunklin brothers, but the job of promoting and selling fertilizer fell upon the shoulders of brother Bill.

Starting about 1950, the firm now covers seven counties with anhydrous ammonia but ships mixed fertilizer to dealers in 20 counties. When fertilizer sales dropped sharply because of cotton allotments in Arkansas, Bill Dunklin managed to hold his business by finding other outlets.

"We saw an opportunity in using

urea on rice," he said, "so that work was pushed quite successfully. The total tonnage of fertilizer in this state dropped about 12 to 14% the last two years, but our sales have held their own. They should be even higher in 1959."

Mr. Dunklin has found that to sell a product you often must promote it. He has done this with fertilizer. His outside service man takes dozens of soil samples and sends them to a state laboratory. The land owner pays the small fee charged by the laboratory but the Planters Fertilizer & Soy Bean Co. makes no charge.

"The first step in getting a farmer interested in fertilizer is to show

him what his soil contains and what it needs," Mr. Dunklin explained. "We can walk over that man's cotton or rice field and explain why certain fertilizers will make him a larger profit."

After the customer buys fertilizer, he is not forgotten in any manner. Mr. Dunklin keeps records on the field, such as amount of fertilizer used, yield increase and total loss or profit.

"We are also entering into a picture-taking program," he said, "and we're encouraging our dealers to take pictures of good crops. These can be printed on pamphlets and

(Turn to **SALES PICTURE**, page 13)

NEW LINES ADD NEW LIFE TO ARKANSAS FARM STORE

When suburban homes began to go up in his area, O. H. Fuller of Little Rock, Ark., came up with a new angle for his firm, Fuller Feed & Supply Co. He began stocking merchandise of many kinds. A wider variety of products was desired so that he might pick up more suburban customers.

New lines, such as farm hardware, fertilizer and pesticides, garden seed and supplies, poultry supplies, paints, rope and livestock equipment were added.

He decided to dress up the front of the store. He built a porch which is 4 ft. wide at one end and spreads out to 15 ft. at the other, so arranged to conform to the angle of the highway as it cuts across his front property line. (See picture.)

This porch is enclosed with transparent plastic glass. It keeps out the wind and rain, but not the view. Hundreds of motorists who drive by every day can look right into the store at the displays, and they can also see the big parking lot to one side. The customer must pass through the porch, where there are well-arranged displays of pottery, brooms, water and milk buckets, plant food

and other items.

Inside the main store Mr. Fuller has a well-lighted show case where he keeps three different grades of eggs which he sells for his customers.

He also has attractive wall and floor displays to stimulate self service buying.

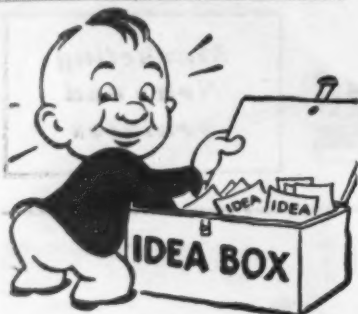
In discussing the change-over, Mr. Fuller says: "Our rural population

has moved farther out of the city. There is a new crop of suburbanites, however, who like to raise gardens, chickens and even livestock. These are people who love country living, and they usually have good jobs in town, which makes a good combination for the farm store owner."

Mr. Fuller still has a good chicken business. In fact, it is better than ever before. He gives his poultry operators a lot of services, including help with culling, debeaking and medication. The store has a delivery route for these customers. Most stores charge 10¢ cwt. for delivering feed, but the Fuller trucks deliver it free for a nearby area. If the customer lives several miles out of town there will be a charge of 5¢ cwt.

"This type business takes a lot of personal service, friendliness to customers, more advertising and more careful management," he said. "You need to arrange things so that customers can wait on themselves. You need to make a study of what people in your area will buy. Stock everything they need, but don't build up a big inventory of unproven goods. Goods left too long on the shelves or floor are profit robbers."





What's New...

In Products, Services, Literature

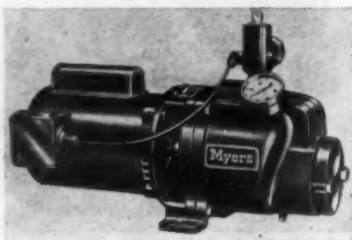
You will find it simple to obtain additional information about the new products, new services and new literature described in this department. Here's all you have to do: (1) Clip out the entire coupon and return address card in the lower outside corner of this page. (2) Circle the number of the item on which you desire more information. Fill in your name, your company's name and your address. (3) Fold the clip-out over double, with the return address portion on the outside. (4) Fasten the two edges together with a staple, cellophane tape or glue, whichever is handiest. (5) Drop in any mail box. That's all you do. We'll pay the postage. You can, of course, use your own envelope or paste the coupon on the back of a government postcard if you prefer.

No. 6869—Crabgrass Preventive

"Chip-Cal Granular," a crabgrass preventive for use on established turf, has been announced by Chipman Chemical Co., Inc. The granular material is ready for use and can be applied by a mechanical fertilizer spreader or portable seed-sower. According to company literature, the product prevents crabgrass from growing by killing the germinating seed and seedling plants. At the same time, the company says, it will suppress annual bluegrass and chickweed, and certain soil insects and grubs. The material contains a low-lime calcium arsenate. Details can be obtained by checking No. 6869 on the coupon and mailing to this publication.

No. 6873—Jet Pump Line

A new series of Olympian jet pumps has been introduced by the F. E. Myers & Bro. Co. The line is offered in three basic models. The Medalist is a convertible, two-stage jet pump, available in 1/2 to 1 h.p. sizes. The Challenger is a single stage convertible jet pump in 1/2 to 1 h.p. sizes. The Pacer is available in 1/2 and 3/4 h.p. sizes, either shallow or deep well. All models are also available as



pump-tank units. Complete details on all models can be obtained by checking No. 6873 on the coupon and mailing to this publication.

No. 6872—Bulk Fertilization Booklet

"Your Land is Different," a booklet which points out advantages of bulk fertilizer use, has been prepared by Highway Equipment Co. The booklet contains tips on restoring plant foods, soil testing, liming, proper application of fertilizer and effective spreading patterns. The booklet also discusses bulk spreading methods and equipment. For a copy, check No. 6872 on the coupon and mail to this publication.

No. 6870—Forest Fertilization Handbook

American Potash Institute has issued a handbook on forest fertiliza-

tion. The handbook contains articles by leading world authorities on forestry. Various aspects of research and practices in Europe are discussed and progress in diagnosing nutrient needs of forest trees through soil



testing and leaf analysis is covered. Other subjects handled are: "Forest Fertilization Possibilities in the U.S.," forest fertilization in Germany and forestry research in the U.S. and Canada. Copies are available on request by checking No. 6870 on the coupon and mailing.

No. 6874—Chemical System Brochure

An eight-page brochure, available from Technicon Controls, Inc., describes the AutoAnalyzer, an automated system for continuous chemical analysis. The system, according to company literature, can analyze trace materials down to parts per billion, and continuously record results with an accuracy of 1%. The brochure discusses the unit's use in the laboratory. Principles of the operation of the system are detailed. A complete description of the system's components is included. For copies, check No. 6874 on the coupon and mail.

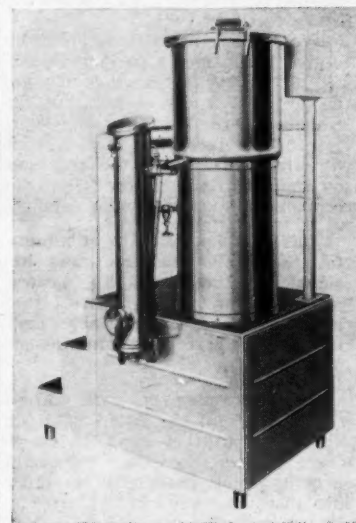
No. 6871—Polymer Tank Linings

Wendnagel & Co., Inc., announces the introduction of a wood tank lining made of various polymers. The

linings are heat sealed into a bag liner made to fit the inside of the tank. They can be furnished for round or rectangular tanks, new or already in use, the company says. According to company literature, fittings are easily connected to the tank with the liner in place. In some cases it is possible to use plain steel or galvanized fittings with a sleeve made of the tank lining running through the fittings and ending with a flange for outside connection. A handbook containing data can be obtained by checking No. 6871 on the coupon and mailing.

No. 6868—Vacuum Evaporator

Tower Iron Works, Inc., announces the availability of the "Tower-Anhydro Patented Vacuum Evaporator." The unit is designed for processors of liquid materials where low temperature evaporation is required, the com-



pany said. It is fabricated of stainless steel in both laboratory and production models. According to company literature, the unit is especially suited to processing heat sensitive or foaming materials because of the low operating temperatures possible. For complete details and specifications, check No. 6868 on the coupon and mail to this publication.

Send me information on the items marked:

- | | |
|---|---|
| <input type="checkbox"/> No. 6859—Sprayer | <input type="checkbox"/> No. 6868—Vacuum Evaporator |
| <input type="checkbox"/> No. 6860—Dry Bulk Transport | <input type="checkbox"/> No. 6869—Crabgrass Preventive |
| <input type="checkbox"/> No. 6861—Weed Killer Booklets | <input type="checkbox"/> No. 6870—Forest Fertilization Handbook |
| <input type="checkbox"/> No. 6862—Weed Control Movie | <input type="checkbox"/> No. 6871—Polymer Tank Linings |
| <input type="checkbox"/> No. 6863—Literature on Spreaders | <input type="checkbox"/> No. 6872—Bulk Fertilization Booklet |
| <input type="checkbox"/> No. 6864—Weed Control Bulletin | <input type="checkbox"/> No. 6873—Jet Pump Line |
| <input type="checkbox"/> No. 6865—Fogging Machine | <input type="checkbox"/> No. 6874—Chemical System Brochure |
| <input type="checkbox"/> No. 6866—Application Equipment Catalog | <input type="checkbox"/> No. 7305—Moisture Balance |
| <input type="checkbox"/> No. 6867—Section Strainer | |

(PLEASE PRINT OR TYPE)

NAME

COMPANY

ADDRESS

CLIP OUT—FOLD OVER ON THIS LINE—FASTEN (STAPLE, TAPE, GLUE)—MAIL

FIRST CLASS
PERMIT No. 2
(Sec. 349,
P. L. & R.)
MINNEAPOLIS,
MINN.

BUSINESS REPLY ENVELOPE

No postage stamp necessary if mailed in the United States

POSTAGE WILL BE PAID BY—

Croplife

P. O. Box 67

Reader Service Dept.

Minneapolis 40, Minn.

Also Available

The following items have appeared in the What's New section of recent issues of Croplife. They are reprinted to help keep retail dealers on the regional circulation plan informed of new industry products, literature and services.

No. 6863—Literature On Spreaders

Literature on New Leader power take-off combination lime and fertilizer spreaders has been released by the Highway Equipment Co. Both of the company models, the L-19S and the L-17S, are covered in the colored and illustrated brochure. Specification tables and general information about the spreaders are included. Copies can be obtained by checking No. 6863 on the coupon and mailing to this publication.

No. 6860—Dry Bulk Transport

A new twin-screw unloading steel trailer designed to haul all types of heavier dry bulk material has been announced by the Butler Manufacturing Co. The "clean bore" interior of the trailer's 60° slope side walls is said to assure positive flow to the twin-screws and permit fast, continuous unloading without material hang-out or bridging. Twin dual pitch 9 in. diameter screws are each 28 ft. 6 in. long and have 6 in. pitch the first

(Turn to NEW PRODUCTS, page 12)



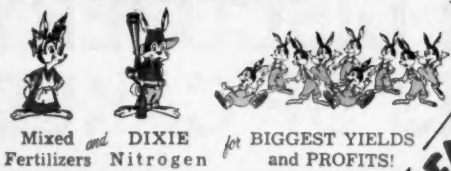
FREE



DOUBLE BARRELED SALES POWER FOR YOU!!

THESE SALES AIDS HELP YOU SELL YOUR
MIXED FERTILIZERS AND DIXIE NITROGEN

IT TAKES BOTH



LEAFLETS!
FOLDERS!

SIGNS!
POSTERS!
DECALS!
AD MATS!
RADIO SPOTS!



DIXIE NITROGEN'S FULL LINE OF SALES LITERATURE. EACH PIECE A COMPLETE "SALES CALL" EACH PIECE BASED ON EXTENSION SERVICE FACTS. EACH PIECE SELLING PROFITS—PROFITS FROM A COMPLETE FERTILITY PROGRAM. EACH PIECE DESIGNED AS A SELF-MAILER.

NEWSPAPER AD MATS

Use these mats to advertise your mixed fertilizers and Dixie Nitrogen.

ASK ABOUT RADIO SPOTS!



METAL OUTDOOR SIGNS

Colorful 3' x 2' signs to nail to wall or beside loading door. Limited supply.

WALL POSTERS

TWO OF 'EM! "4 STEPS TO PROFITS"
"FACTS ABOUT BAG FOR BAG"



TRUCK DECALS

BIG 24" x 18". Plenty of room for you to put your name and address.

THEY'RE **FREE!** WRITE FOR YOURS TODAY!

WE'RE SELLING COMPLETE FERTILITY AND
WE'RE NOT PULLING ANY PUNCHES



SOUTHERN NITROGEN COMPANY, Inc.
P. O. BOX 246 SAVANNAH, GEORGIA

SOUTHERN NITROGEN COMPANY, INC., P. O. Box 246, Savannah, Ga.

YESSIR! You can send me FREE — — This many:

- | | |
|----------------------------------|---|
| — SETS OF WALL POSTERS | — SETS OF NEWSPAPER MATS |
| — PASTURE PROFITS FOLDERS | — OUTDOOR METAL SIGNS |
| — SMALL GRAINS FOLDERS | — TRUCK DECALS |
| — GROW, CORN! FOLDERS | — PLEASE SEND INFORMATION ON RADIO SPOTS, |
| — COTTON-PICKIN' PROFITS FOLDERS | |

SHIP FREE MATERIAL TO:

Name _____

Firm Name _____

Address _____

(We reserve the right to limit quantities if our supply should run short.)



NEW PRODUCTS

(Continued from page 16)

20 ft. for power unloading of the trailer even with a full, tightly packed load and 9 in. pitch on the rear 8 ft. 6 in. length provides speed and



assures maximum rate of delivery, it is claimed. Check No. 6860 on the coupon and mail it to secure details.

No. 7305—Moisture Balance

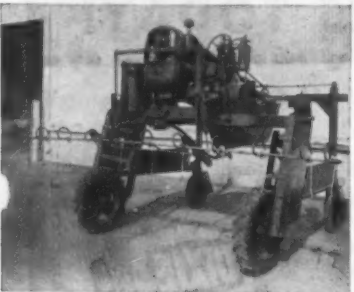
The Ohaus Moisture Determination Balance is a combination drying unit and precision balance which provides an easy way to measure moisture content of a wide variety of



products and materials, announced Seedburo Equipment Co. The unit can be used for solids or liquids and shows the percentage of moisture directly to plus or minus 0.170. The percentage of moisture loss can be read directly throughout the entire cycle as the moisture is driven off, the company says. For details, check No. 7305 and mail to this publication.

No. 6859—Sprayer

Fabricated Metals, Inc., announces a new high-clearance, self-propelled adjustable-width sprayer, designed in cooperation with Dr. Lauren D. Anderson of the University of California Experimental Station at Riverside,



Cal. The 75-gal. sprayer is used for both experimental and commercial applications of insecticides, fungicides, herbicides, weed killers, defoliant, and liquid plant food additions. The "Spray Rite" sprayer is used for seed crops, oil crops, flower growers, vegetables such as corn, lettuce, tomatoes, artichokes, celery,

cabbages and sprouts as well as vineyards, and as a defoliant in cotton. It also can be used as a duster. The unit is self-propelled with a basic David Brown two-cylinder, air-cooled diesel tractor. The "Spray Rite" uses 1½ gal. of diesel fuel per full day's work, it is claimed. Wheel widths are adjustable by one man from 60 in. to 96 in. Check No. 6859 on the coupon and mail it to secure details.

No. 6866—Application Equipment Catalog

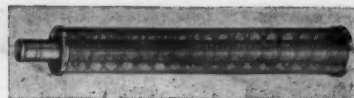
A 1959 catalog of application equipment for liquid solutions has been prepared by Schelm Brothers, Inc. The catalog contains information, specifications and photos of the company's complete line of equipment. A special section outlines information on accessory equipment. Included among the equipment discussed are air pressure applicators, pump type applicators, applicator tanks and transport tanks. For copies, check No. 6866 on the coupon and mail.

No. 6864—Weed Control Bulletin

Stauffer Chemical Co. has published an illustrated brochure which describes the various applications of its pre-emergence herbicide, Eptam. Included are detailed outlines of the crops on which the product can be used and the types of weeds controlled. Descriptions of application methods—broadcast, band, pre-emergence and post-emergence—are also covered. Copies of the bulletin can be obtained by checking No. 6864 on the coupon and mailing to this publication.

No. 6867—Suction Strainer

Spraying Systems Co. has introduced the "8060 Suction Strainer" for use on spray rigs. The large capacity strainer provides a 75% greater open screen area, company literature claimed. The item is designed for spray rig applications where a large



volume of liquid per minute is to be sprayed or where the spray rig user wishes to reduce possibility of clogging, the company said. The unit will pass through any standard size steel drum bung hole, the company said, and liquid can be withdrawn to within 1½ in. of tank or drum bottom. For details, check No. 6867 on the coupon and mail.

No. 6862—Weed Control Movie

A 12-min., 16 mm. full color and sound movie which describes modern weed control practices has been produced by the Stauffer Chemical Co. The film depicts the most efficient methods of applying both granular and liquid herbicides and illustrates the weed control efficacy of Stauffer's pre-emergence herbicide, Eptam.

NEW FERTILIZER DISCOVERY COSTLY RETURNS OF CAKED

Monsanto farm researchers
tested New Lion E-2
all over the U. S. A. . . .

Amazing New
LION E-2
Ammonium Nitrate
just would
not cake!

THE HOTTEST PLACE . . . NO CAKING!
Phoenix, Ariz. Average high temp.: 118°F.

WE GUARANTEE IT WILL NOT CAKE IN YOUR PLACE . . . or on your customer's farm. You and your customers now get a prilled ammonium nitrate fertilizer that won't cake in the bag under any storage conditions! No other ammonium nitrate can match New Lion E-2 for noncaking, dust-free performance.

NEW SUPER-DENSE LION E-2 GIVES YOU prills of uniform size, 50% harder for dust-free handling and no loss in ground or air application. Super-density puts 20% more material in spreader, means less handling, storage and labor.



TEST IT YOURSELF. This hand compression chamber creates pressures up to 600 lbs. per sq. inch, but it can't cake Lion E-2. Your Monsanto salesman will show you how to compare Lion E-2 with any other ammonium nitrate you carry.

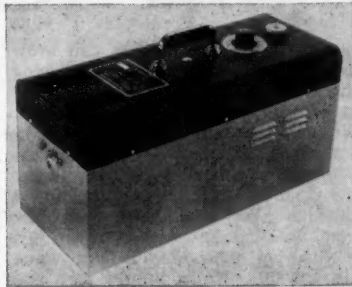
Also shown are a series of field tests which portray the increased crop yields which result from herbicide treatments. These include such acreage crops as corn, beans, alfalfa and forage legumes, beets and ornamentals. Prints of the film may be obtained on loan without charge. Check No. 6862 on the coupon and mail it to Croplife.

No. 6861—Weed Killer Booklets

Two folders reviewing "Diamond Fence Rider" and "Crop Rider Formulations" in handling a wide range of weed-killing and brush-control problems on farms have just been issued by the Diamond Alkali Co. Both folders also include handy, ready-reference wall charts covering specific weed and brush control problems, type of herbicide and quantity of solution required and time-tested application tips. Copies are available free on request. Check No. 6861 on the coupon and mail it to Croplife.

No. 6865—Fogging Machine

Aero-Master, Inc., announces a newly designed Model A thermal aerosol insecticide fogging machine. The machine provides insecticide fog dispersal, the company says, and a constant temperature control prevents heat breakdown of insecticide



in the thermal pressure chamber. For specifications and further data, check No. 6865 on the coupon and mail to this publication.

SALES PICTURE

(Continued from page 9)

used in our direct mail campaign."

For a few years after the advent of fertilizer in the Arkansas River bottomlands, most stores were merely order takers. Farmers were enthusiastic about using fertilizer. Then troubles began to arise. One was the belief that nitrogen delayed the maturity of cotton.

"It never pays to hide from a problem," said Mr. Dunklin. "We took this opinion seriously and are doing all we can to find out if it's true. If it is, then we'll try to find some solution."

The store is working very closely with county agents, the experiment stations and other agencies. Whenever something new is found, Mr. Dunklin thoroughly investigates it before passing it on to his customers.

When a few customers began to ask for a granulated type of ferti-

lizer, Mr. Dunklin investigated it, found it was easier to apply, and advertised that this type fertilizer was available at the Planters Fertilizer & Soy Bean Co.

"Also in our work with the experiment stations, we learned that anhydrous ammonia could be effectively applied in irrigation water," he said. "We persuaded a few farmers to try it, and as a result our anhydrous sales increased."

Another way of learning what is needed is to try demonstration plots. Several of these test plots have been established on farms and the results carefully noted. Mr. Dunklin says that a plot on some farmer's land is much more impressive to other farmers than if the results were achieved by an experiment station.

Mr. Dunklin has three ways of letting farmers know the benefits of fertilizer. He and his service man visit with them regularly, he works closely with dealers in training them to be salesmen and not merely order takers and he advertises liberally.

At one time the store had a very unique television program, but it was abandoned because of the cost. Now the firm uses the local newspaper, spot announcements on radio and the yellow pages of the telephone directory.

"All advertising has its benefits," he said, "but I believe direct mail is one of the most effective for us."

In working with dealers, Mr. Dunklin delivers anhydrous ammonia in a large company-owned transport truck. He has set up 15 large storage tanks for anhydrous ammonia. He delivers to retail customers with a 1,000-gal. tank truck. If the farmer uses a large amount of fertilizer, the company may charge only a minimum or nothing at all.

"On most deliveries of mixed fertilizer," he said, "we hire an independent trucker to make delivery, and the cost of transportation is added to the farmer's account. No company can afford a high delivery expense on such a low-profit item as fertilizer."

Because of his success in promoting fertilizer use, Mr. Dunklin was elected president of the Arkansas Plant Food Educational Society in 1955-56, and has been very active in the organization ever since.

"To sell fertilizer you must have a triple program," he said. "You must keep ahead of your customers on what is needed, you must convince them that fertilizer will increase their crop profits—and you must give something extra in service. Every year we are trying to provide more customer service to our operations. By extending to the farmer all the courtesies and facilities of the company, we have managed to hold and increase our number of customers in an era of cut-throat prices."

"There is no point in selling anything at less than a profitable margin. We make a legitimate profit on every ton sold and expect to continue with that policy."

Cotton Rats Harming Vegetable Crop in Texas

CRYSTAL CITY, TEXAS—Perhaps the largest infestation of cotton rats in history are now plaguing many parts of Texas, according to W. B. Davis, head of the department of wildlife, Texas extension service.

Normally the rats reach a peak population about every 10 years, when diseases and other factors begin to destroy them. Mr. Davis says this is beginning to happen now. The rats ordinarily inhabit tall grass and are vegetarians, though they will rob ground nesting birds during the mating season. One of the main crop losses at present is in the winter vegetable area of South Texas, although they are also cutting down range grasses.

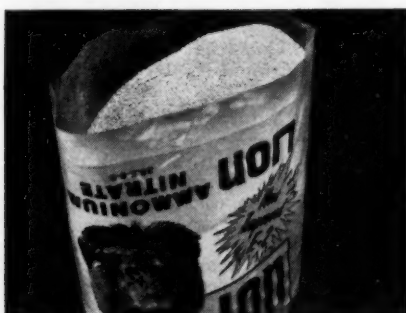
ENDS COMPLAINTS AND AMMONIUM NITRATE!



THE WETTEST PLACE... NO CAKING!
Mobile, Ala. 67.57 in. rainfall per year.



THE COLDEST PLACE... NO CAKING!
Bismarck, N. D. Average low temp.: -44°F.



NEW MOISTUREPROOF BAG of tough polyethylene keeps fertilizer dry and free-flowing until used. Re-usable bags have dozens of uses, help increase your volume on New Lion E-2. Also available in new polyethylene-lined multiwall bags.

NEW LION E-2*

*TRADEMARK OF MONSANTO CHEMICAL CO.

Always stores...Always pours



Monsanto

ST. LOUIS 66, MO.

DEMPSTER LIQUIJECTORS for Every Form of LIQUID FERTILIZER

Only Dempster Liquijectors offer so complete a line of Liquid Fertilizer Equipment... tractor mounted, semi-mounted and carrier mounted... equipped with flow control valves or the simple, super-accurate Dempster Liquijector metering pump.

FOR SOLUTIONS...



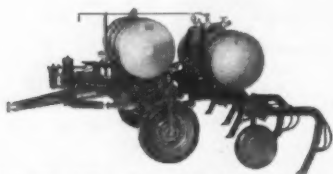
Liquijecting fertilizer solutions directly into the ground is a great advance in economy and efficiency over the spray-boom method. Dempster Liquijectors Type S can be supplied with black iron, aluminum or fiber glass tanks; Liquijector solutions pumps with cast iron or non-corrosive nyrasist castings. Shown above, Dempster Type S Liquijector on Model 500 Dempster 3-point hitch hydraulic lift Tool Carrier.

FOR ANHYDROUS (NH₃)...



Thousands of Dempster Liquijectors now in operation testify to the lasting efficiency of these anhydrous applicators. Available in every size from tractor-mounted 60 gallon machine to large Carrier-Mounted and semi-mounted models covering 14 ft. at a pass. Above: Semi-Mounted Liquijector with positive, accurate ground wheel drive of Liquijector Pump.

FOR BOTH...



Dempster Dual-Purpose Liquijectors, mounted on Model 500 Tool Carriers, feature two 150 gallon tanks—one with Liquijector pump for solutions, the other, with flow control valve for Anhydrous application at a single operation.

For Free Illustrated Folder on the Complete
Dempster Liquijector Line, Write



FARM SERVICE DATA Extension Station Reports

Most Louisiana farmers can grow 100 bu. of corn an acre by applying about \$20 worth of fertilizer, advises A. G. Killgore, specialist (agronomy), with the Louisiana State University Agricultural Extension Service. Heavier fertilization and closer spacing are two practices that will help Louisiana corn growers increase yields in 1959.

"Growers who already are using these practices plus hybrid seed and shallow cultivation are producing more than three times the state's 1958 average yield of 30 bu. an acre," Mr. Killgore states. "It costs just as much to plow, plant, and cultivate to grow 25 bu. an acre as it does to grow 100 bu."

Tests conducted by the Louisiana Agricultural Experiment Station on alluvial soils have shown that 12,000 to 14,000 plants to the acre produce the highest yields. To obtain this desired plant population would require one plant a hill 10 to 12 in. apart on 42-in. rows. This is enough plants to produce 100 bu. an acre.

"On alluvial soils, with a plant population of 12,000 plants an acre, 90-110 lb. of available nitrogen has given maximum and most economical yields with no significant difference between sources of nitrogen," he asserts. "All of the nitrogen can be applied before planting."

"Experiments conducted on hill soils have shown that 9,000 to 10,000 plants an acre produce the most economical yields year-in and year-out. This number of plants will produce a yield of from 75 to 85 bu. an acre. To obtain these desired stands the corn should be spaced one stalk per hill 18 to 16 in. apart on 42-in. rows."

"On these upland soils you should use 400 to 500 lb. an acre of 8-8-8, 5-10-10 or 5-10-5 fertilizer or their equivalents in higher grades before or at planting; then side dress with 50 to 80 lb. of available nitrogen an acre."

A 100-bu. crop of corn requires 160 lb. of nitrogen, 55 lb. of phosphoric acid and 110 lb. of potash an acre, he suggests. The soil will supply some of this plant food, depending on

its fertility. The rest must be obtained from cover crops or commercial fertilizer.

Nitrogen has been found to be the most limiting factor for the production of corn in Louisiana. Corn yields increase about 1 bu. for each 2 lb. of available nitrogen applied within the range of response to nitrogen, emphasizes Mr. Killgore.

★

Lee County, South Carolina, farmers are getting high per acre yields of soybeans. The top yield in the county five-acre soybean contest that was held this past season was made by Edward McDowell who produced 62.1 bu. an acre on five acres. Runners-up in the contest were C. W. Josey with a yield of 48.4 bu. an acre and C. B. Player, Jr., with 43.1 bu. an acre.

The yield of soybeans produced by these South Carolina farmers is an example of what can be done by southeastern planters. These Lee County growers believe that no one section of the country has the market cornered on making high yields at low unit costs of production—and they proved it with their soybean yields in 1958.

Fertilization practices differed among the winners of the contest but all of these growers followed cropping systems which included the use of fertilizer in liberal amounts. The fertility status of their soil was indeed high. Reducing the limiting effect of a short supply of essential plant nutrients permitted the soybeans to take full advantage of the other necessary growth factors with the result that high yields were realized.

These growers in Lee County have demonstrated what many agronomists have known for some time—that low soil fertility is generally the first limiting factor in crop production in the southeast. When the situation is corrected through the adequate and intelligent use of lime and fertilizer, crop yields in this section of the country are comparable with those made anywhere in the U.S.

SHOP TALK



OVER THE COUNTER

By Emmet J. Hoffman
CropLife Marketing Editor

An experiment aimed at encouraging farmers to investigate complete production loans with their banker is now being conducted in Illinois and Indiana. It is believed to be the first large-scale experiment of its type and takes the form of a farm paper advertisement urging farmers in these two states to visit their bankers and discuss the merits of this type of loan.

Sponsored by the Spencer Chemical Co., the advertisement features I. Frank Green of the Commercial National Bank, Peoria, Ill., and W. Haynes Starbuck of the People's Bank, Portland, Ind. Both men are chairmen of the agricultural committee in their respective state bankers associations.

In the advertisement, appearing in the Illinois and Indiana editions of the *Prairie Farmer's* Feb. 21 issue, both men advocate a complete production loan covering fertilizer, seed, fuel and all other requirements as "one of the soundest programs a farmer can use."

The logic behind this type of banker-farmer cooperation is stated this way: "A bank must make loans to make money, but we want to lend

money to the people who will use it wisely. . . . When you tell your banker you want a complete production loan covering all your expenses, including fertilizer, he respects your judgment. He knows you are going to use the money to make more money."

Following this advertising experiment, all participating banks will be surveyed to determine what response was made by their farm customers,



Doing Business With

Oscar & Pat



By AL P. NELSON
Croplife Special Writer

There are some days when things never seem to go right. Minnie Schoenfeld, Oscar's harassed, somewhat cowed, but very frugal wife had been leaning over her garden fence gossiping a little with Mrs. Mike Slovak, when suddenly she said: "Oh, my pork chops."

Turning, she gathered her skirts and fled for her kitchen to find the house full of smoke, the edges of the pork chops crisp and only the middle of the chops edible. Minnie could have wept; in fact, she was going to when the front door opened and Oscar came home.

"Was ist los?" he cried in alarm. "Are you burning the house down?"

"No—no," Minnie stammered worriedly. "But I was outside in the back yard and stayed too long, and the pork chops burned."

Oscar snorted and stomped angrily into the kitchen and surveyed the unsavory mess in the pan. He looked severely at his wife: "Ach, are they the 59¢ a pound ones?"

Minnie nodded fearfully. "Yes, they are the ones I always get at Farmers Market, nine blocks down the street."

Oscar pursed his lips. "Well, that is bad enough to waste 59¢ chops, but it is good you did not buy the 69¢ ones. Minnie, I am surprised at you. You are getting to be as careless as that Irishman in the office. Ach, and I'll bet you were gossiping with that Mrs. Slovak again."

"I—I was out there just for a minute to brush the snow off the bird bath, and—and," began Minnie.

"And she started to tell you something about who was runnink aroundt with somebody else's wife and so you stayed and listened!"

The telltale red on Minnie's face was a giveaway.

"You are going to have to improve around here," Oscar snorted angrily. "You are going to have to tend to your knittin' and not get a lot of crazy ideas like that Pat."

"I—I have some cold ham I can cut up for supper," Minnie said. "And I have fresh kuchen. It will be a good meal, Oscar. Don't scold."

"Don't scold! Ach, you are getting as soft as Pat. He says I shouldn't yell at him so much. But you have to yell at people to set them straight. Otherwise they are so foolish. That crazy Pat—and now you."

A great light came into Minnie's mind. Normally she would expect to get scolded for a mishap to cheap pork chops or any other kind of meat, but now she sensed how to turn the wrath of her husband from herself; she knew how to become a sounding board.

"Oscar," she asked timidly, "did—did something go wrong at the office?"

"Wrong!" thundered her husband. "Something is wrong there all the time, so long as that Irishman is there. Himmel, I can't sleep goot nights any more. Always I worry what he's doin' at the office nights. Why can't he work days like sensible people do?"

Minnie went on preparing the revised dinner. "What went wrong with Pat today?"

"Always he comes up with such crazy ideas," he said peevishly. "Now do you want to know what he wants to do in that demonstration garden next summer?"

"We got some very good sweet corn and tomatoes from that garden last year," Minnie observed, womanlike. "It must be all the fertilizer you and Pat used."

"I don't care what we got out of

the garden last year!" bellowed Oscar. "I will not march around there with a sign on my back."

"A sign on your back?" Minnie was shocked.

"Yes, he wants me to put on old clothes and get a pail and a stick and go through the four rows of potatoes in the demonstration garden and knock the potato bugs off into the pail! On the sign it would say 'The Old Way.'"

"The Old Way!" Minnie was nonplussed.

"Yes, and then he would walk along behind me with a sprayer on his back

squirting the plants, and he would have a sign on his back which would say 'The New Way.'"

Minnie looked offended. "Well, the nerve of him. Why doesn't he give you the sprayer and he take the potato pail and the other sign?"

"Ach, he says the pail would suit me better than him. And the sign, too. But I will not carry any sign, old or new, Minnie. Ach, I would look foolish."

"But why, why does he want to have you two do this?"

"Ach, he wants to have a picture taken of us with our signs showing

and print it in a newspaper ad," Oscar snapped. "He says it will help sell more sprayers. I have neffer been so insulted in my life. Oscar Schoenfeld, ach, is a big man and has money in the bank, lots of it. He does not make a fool of himself for people to laugh at."

Minnie hurried forward and placed some sliced cold ham on the table, along with hot mashed potatoes. "Sit down and eat, Oscar, and you will feel better."

Oscar sat down and looked at the inviting fare, also at the pickled apples, the sour pickles, the asparagus and the brown, cinnamon topped coffee cake.

"Minnie," he said, "you are much better than Pat. When I scold you, you listen and you change like I want you to. That Pat he just gets mad."

Minnie was glad that her face was turned as Oscar looked in her direction, for she was thinking: "I've got news for you, Oscar. I get mad, too, but I don't let it show. Someday—"



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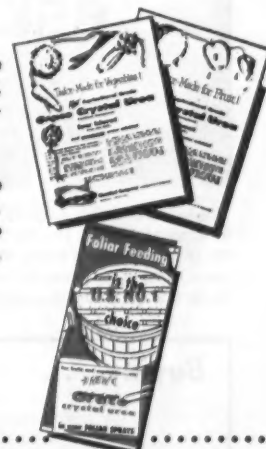
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Grace Chemical Company

A DIVISION OF W. R. GRACE & CO.
MEMPHIS, TENN.



PACKAGE DEAL

(Continued from page 9)

farms. Since there are many different kinds of soil in this irrigated area, the company arranges to test fertilizer on each soil type.

"We like the row method best," he said. "This means putting fertilizer on a few rows, then skipping some for a comparison of yield. We've also done a lot of experimental work with new fertilizers. The farmer agrees to use the fertilizer which is furnished to him free. If it is successful, then he is our best salesman in extolling its merits to other cotton producers."

At one time the company rented applicators and storage tanks to customers. Now it has several applicators that fit on the draw bar of the tractor. The farmer uses these free, but a close scheduling is followed so he will not keep them longer than necessary.

During the last few years much fertilizer has been put into irrigation water, so American Chemical has dozens of mobile tanks for loan. They are equipped to hold anhydrous ammonia, phosphoric acid and a nitrate solution. These are also routed to customers during the fertilizing season.

"Our customers are a bit different from those found in most parts of the country," explained Mr. Willeiter. "Farming is expensive out here, where one irrigation well may cost \$20,000 complete with pipe, pump and motor. A \$100,000 investment is considered modest. Operators farm intensively, which means putting on from \$30 to \$35 worth of fertilizer per acre, irrigating from eight to 10 times, and then dusting or spraying the field six to nine times."

Production costs may range as high

as \$200 per acre, but yields are also great. Nearly everyone makes two bales per acre, while the better farmers will average over three bales.

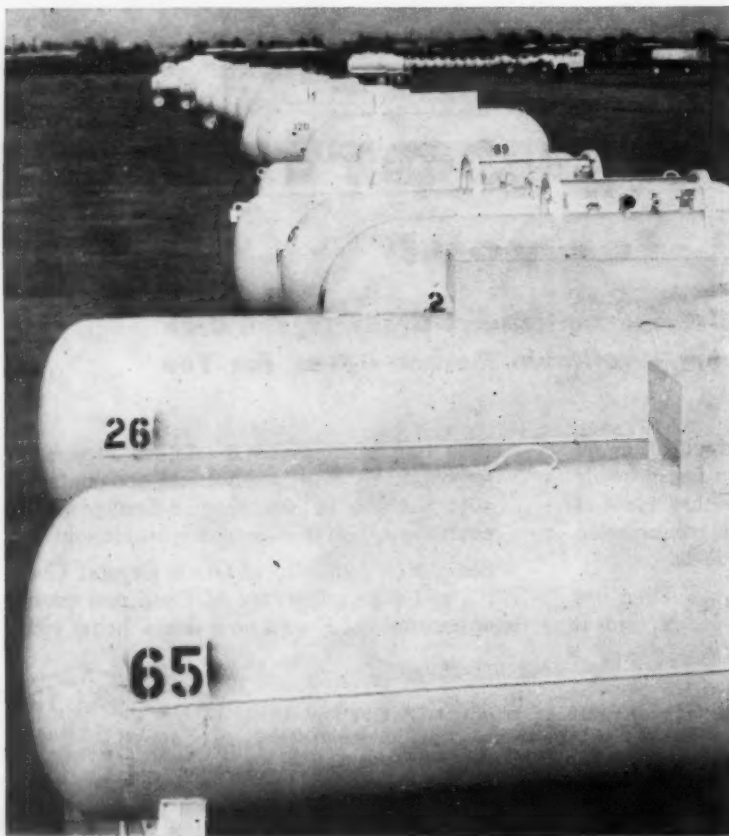
These farmers are different from the owners of small family farms, according to Mr. Willeiter. They are good business men, they keep accurate records—and they know just what a fertilizer does to a crop. Most of them are well versed in chemical terminology, and can read a soil test correctly.

"It takes a different type of dealer to hold their business, too," said Mr. Willeiter. "They are open-minded, but they are also very busy men. They want courteous treatment, but mostly they want a fair price and lots of service. If one orders several tons of fertilizer to be delivered to his place at 7 o'clock tomorrow morning, you better have it there. If not, he'll phone some other firm 30 minutes later, and you may not get him back."

To insure satisfaction, American Chemical always insists that the farmer or his foreman accompany the duster pilots to a field when work is beginning. Then if there are any suggestions or criticism, the company can act upon it before any misunderstanding occurs.

One other thing the dealer in this area must watch is to keep plenty of fertilizer and insecticides on hand. If he must put in an order for delivery three days hence, it may reach Pecos too late.

"We try to give plenty of service, handle high quality materials and work with the farmer in raising those yields," said Mr. Willeiter, in conclusion. "But most of all it is service. Without it, no dealer in this area could stay in business."



These are only a part of the mobile storage tanks owned by American Chemical Co. at Pecos, Texas. These are loaned to farmers who pull them to their farms, then bring them back to the store. Such service is essential in this area, and was brought about by the intense competition of companies trying to get a part of this multi-million dollar business.

What's Been Happening?

This column, a review of news reported in Croplife in recent weeks, is designed to keep retail dealers on the regional circulation plan up to date on industry happenings.

Dempster McIntosh, managing director of the Development Loan Fund, has signed an agreement by which the U.S. will lend \$12 million to the Kingdom of Greece to assist in establishing a nitrogenous fertilizer plant. The signing completed action on a transaction approved and announced by the Development Loan Fund last June.

A marked decrease in the average abundance of European corn borers last fall throughout the U.S., as compared with corn borer numbers found in the fall of 1957, was noted in figures recently released by the U.S. Department of Agriculture. However, 58 additional counties were reported infested for the first time in 1958, according to plant pest control officials of the USDA's Agricultural Research Service.

Collier Carbon and Chemical Corp., Los Angeles, has announced that it is expanding the capacity of its Brea, Cal., ammonia plant by 20%.

Completion of its current program of modernization in its Ontario fertilizer plants has been announced by Canadian Industries, Ltd., Toronto.

South Dakota fertilizer dealers made tentative plans to organize a fertilizer dealers association during the ninth annual fertilizer and soil management short course at South Dakota State College in Brookings. A meeting to set up formal organization had been set for Feb. 23, at Brookings.

The U.S. Department of Agriculture has reported that carryover stocks of pesticides on Sept. 30, 1958, averaged about 10% lower than on the same date in 1957. Larger carryovers of new materials than in 1957, especially organic phosphates and weed killers, were more than offset by shorter inventories of DDT and grain and soil fumigants, the report said.

A credit of \$5 million to an Egyptian fertilizer company to finance purchases of equipment in the U.S. for an expansion of its operations was announced recently by Samuel C. Waugh, president of the Export-Import Bank of Washington.

Installation of new equipment at Fort Worth, Texas, to manufacture liquid weed control materials for railroad use has been announced by Pacific Coast Borax Co., division of United States Borax & Chemical Corp.

In the field of fertilizers, the top need is for research leading to development of fertilizers having controlled rates of nutrient release, said the U.S. Department of Agriculture's soils, water and fertilizer research advisory committee at its annual meeting in Washington recently.

Grasshoppers are likely to be more widespread, but less of a threat to western crop and rangelands in 1959, the U.S. Department of Agriculture announced with the release of figures showing the results of federal-state surveys made last fall.

Negotiations were completed Jan. 15 for the purchase of Deep-Root Fertilizers, Inc., Olathe, Kansas, by the American Agricultural Chemical Co. The announcement was made in New York by C. M. Powell, president of the AAC company.

Construction of a \$500,000 addition to its fertilizer plant in Fort Pierce, Fla., was announced by W. R. Grace & Co. Chemical Division.

General Fertilizer Corp. has filed a charter of incorporation with the corporation department of the secretary of state's office in Dover, Del. Authorized capital stock of the firm is \$10,000.

"We must keep in step with the farmers in helping them solve their problems and supply their needs," Dr. D. E. Wolf, the Du Pont Co., Atlanta, Ga., told more than 175 persons attending the Pesticide School at North Carolina State College in Raleigh recently.

Construction of SunOlin Chemical Co.'s \$11 million urea plant at north Claymont, Del., is scheduled to start in March, 1959, and should go into operation by the end of the year, announced James I. Harper, SunOlin president. The 13½-acre site is adjacent to Sun Oil Co.'s refinery at Marcus Hook, Pa. Employment opportunities will be provided for about 40 persons.

The Alabama Soil Fertility Society, Inc., held its fourth annual meeting in Montgomery, Ala., and reelected Frank E. Boyd, southern agronomist for the Virginia-Carolina Chemical Corp., as president.

Mississippi Chemical Corp., Yazoo City, Miss., has announced plans for the construction of a \$1.5 million urea plant at Yazoo City, said Owen Cooper, executive vice president. The plant will produce about 100 tons of urea a day.

U.S. Department of Agriculture scientists at Beltsville, Md., gave their blessing to a suggestion from Croplife that the heavy yields of crops in 1958 placed a heavy drain on basic plant food nutrients and that for the coming crop year prudent producers should reexamine their soil conditions, and prepare to reflect the drains on their soils with replacement values of plant food, reported John Cipperly, Croplife's Washington correspondent.

Consumption of fertilizers in the U.S. and territories of Hawaii and Puerto Rico during the year ending June 30 totaled 22,358,000 tons, a drop of 351,000 tons or 1.5% from that used in the preceding year, according to a preliminary report released by the U.S. Department of Agriculture.

Central Farmers Fertilizer Co. of Chicago shipped the first carload of rock phosphate from its Idaho phosphate works Dec. 19, according to announcement by Joseph L. Lanter, president of the company. The car was consigned to the Farmers Chemical Co., Joplin, Mo.

Although production continues to exceed consumption, the situation in the world nitrogen market is not so pessimistic as statistics might indicate, was the opinion of Aikman, Ltd., London broker, in its annual year-end report on the nitrogen industry.

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Dr. E. T. York, Jr.

Dr. E. T. York, Jr., Named API Extension Director

AUBURN, ALA.—Effective May 1, Dr. E. T. York, Jr., a native of DeKalb County and a 1943 Auburn graduate now living in Washington, D.C., will become extension director of the Alabama Polytechnic Institute. He will succeed P. O. Davis who is retiring on that date after serving as director for 22 years.

Dr. York was on the agronomy faculty of North Carolina State for seven years and became head of the department at the age of 32. He owned and operated a 430-acre crop and livestock farm while in North Carolina.

For the past four years he has been associated with the American Potash Institute as director for the northeastern states.

BOLL WEEVIL

(Continued from page 1)

for 1957. The average in the Coastal Plains of North Carolina and South Carolina was 4,625. The 1957 fall average for this area was 11,374.

The Piedmont area of the two states averaged 2,635 weevils per acre as compared with 6,752 in 1957. The average for north-central North Carolina was 968 compared with 2,205 for 1957.

In southeastern Virginia, weevils averaged 511 per acre, less than one-sixth the 3,335 average found for the same area in 1957.

Georgia's average was 1,133 live weevils per acre of surface trash. This is lower than the 8-year average of 1,279. In 1957, counts averaged 2,081. Counts varied, however, from 145 in south Georgia to as many as 9,196 on one Coweta County farm. Average for north-central Georgia was 2,178.

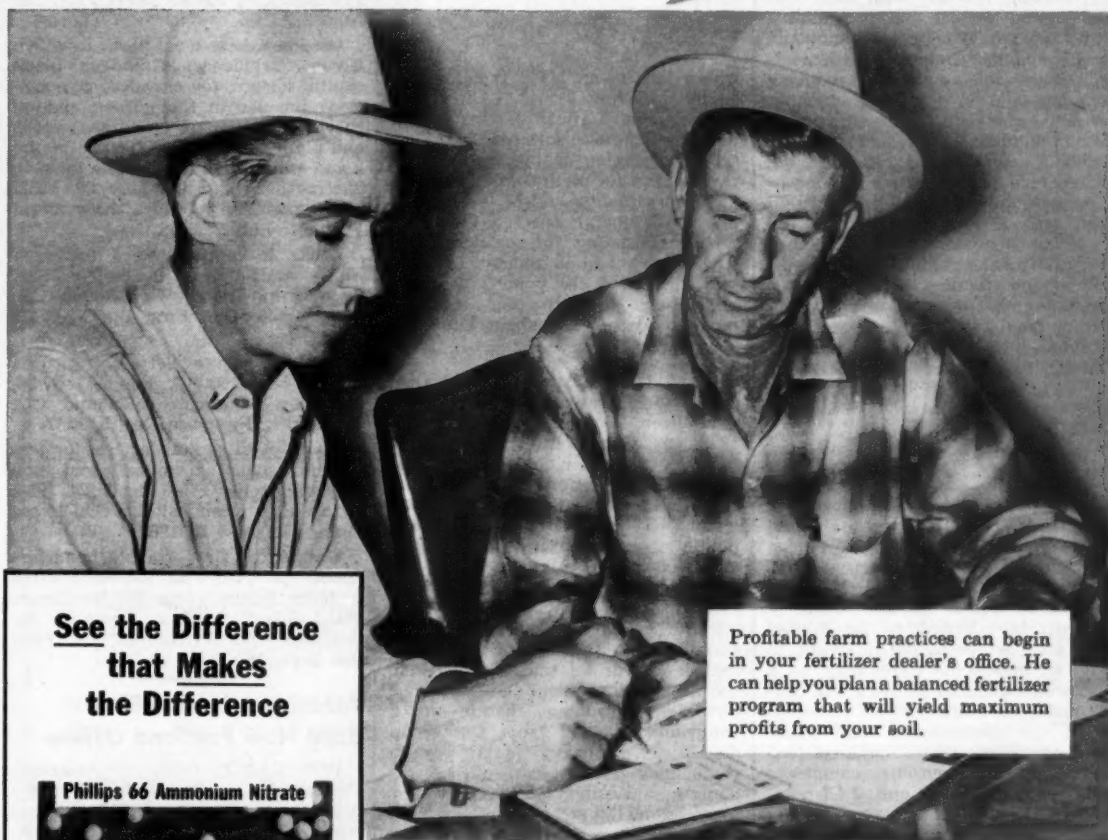
In Mississippi cotton fields, the average number of weevils per acre was 3,792, compared with 6,716 for 1957 and 2,091 for 1956. Highest counts were in the central delta counties, which averaged 4,909 weevils per acre, and the lowest average, 2,960, was found in the north delta area.

In McNairy County, Tennessee, 1958 fall counts averaged 1,214 hibernating weevils per acre compared with 2,365 for the fall of 1957.

Louisiana's Madison Parish had an average of 5,326 live weevils per acre. The average for East Carroll Parish was 9,845, and for Tensas Parish, 2,098. Average for the three parishes was 5,756. Similar counts have been made in Madison Parish for 23 years, and only in 1955 and 1957 were they higher in this parish. The 1955 average was 13,443 and the 1957 average was 6,860.

Surveys will be made again in the spring to determine how many weevils survive hibernation.

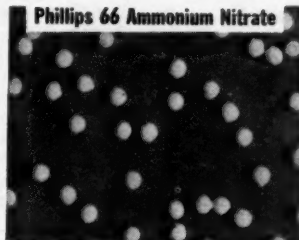
PHILLIPS 66 ads like this appear regularly in **CAPPER'S FARMER, PROGRESSIVE FARMER, FARM JOURNAL, FARMER-STOCKMAN** and **FARM and RANCH . . .** part of a continuing program to help dealers sell more mixed fertilizers and **PHILLIPS 66 AMMONIUM NITRATE.**



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Your fertilizer dealer works with your county agent, the soil conservation service and vo-ag

teachers to keep informed on new farming developments. And every day he meets many leading local farmers who tell him about their own practical experiences.

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Industry Patents and Trademarks

2,872,297

Apparatus for Converting Liquid Anhydrous Ammonia to Aqua Ammonia. Patent issued Feb. 3, 1959, to John W. Dugan, Houma, La., assignor to Flo-Mix Fertilizers Corp. Apparatus for converting liquid anhydrous ammonia to aqua ammonia comprising a first vessel providing a liquid anhydrous ammonia receiving chamber; a second vessel in concentric surrounding relation with said first vessel and providing a liquid anhydrous ammonia pressure reducing chamber; means communicating with said liquid anhydrous ammonia receiving chamber and said pressure reducing chamber for delivering liquid anhydrous ammonia from said liquid anhydrous ammonia receiving chamber into said pressure reducing chamber; a third vessel in concentric surrounding relation with said first and second vessels and providing a water and liquid anhydrous ammonia mixing chamber; means communicating with said pressure reducing chamber and said mixing chamber for delivering reduced pressure anhydrous ammonia from said pressure reducing chamber into said mixing chamber; a fourth vessel in concentric surrounding relation with said first, second, and third vessels and providing a water receiving chamber; and means communicating with said mixing chamber and said water receiving chamber for delivering water from said water receiving chamber into said mixing chamber, said mixing chamber being interposed between said pressure reducing chamber and said water receiving chamber.

2,872,367

Insecticidal Compositions Containing 9,9'-Bifluorylidene. Patent issued Feb. 3, 1959, to Harry L. Haynes, Bronxville, and Anthony A. Sousa, Hastings, N.Y., and Bernard B. Lampert, North Plainfield, N.J., assignors to Union Carbide Corp. A concentrate adapted to be diluted with an inert pesticidal adjuvant to yield an insecticide comprising, as a toxicant, a member of the group consisting of 9,9'-bifluorylidene, complexes of 9,9'-bifluorylidene and picric acid, complexes of 9,9'-bifluorylidene and 1,3,5-trinitrobenzene, complexes of 9,9'-bifluorylidene and 2,4,7-trinitrofluorenone and complexes of 9,9'-bifluorylidene and sulfur, together with a surface active agent.

2,872,368

Emulsifiers and Toxicants Containing the Same. Patent issued Feb. 3, 1959, to Herbert L. Sanders, Edward

A. Knaggs and Marvin L. Nussbaum, Chicago. An agricultural and livestock composition for use in conjunction with organic solvent solutions of water insoluble toxicants, which, upon the addition thereof to soft as well as hard waters, forms a fine dispersion therein of said toxicants, said composition containing (a) at least one nonionic emulsifier selected from the group consisting of higher molecular weight ethers and thioethers of polyoxyethylene glycols and higher molecular weight carboxylic acid esters of polyoxyethylene glycols, the higher molecular weight radicals containing from 8 to 22 carbon atoms and the polyoxyethylene glycol radical having a molecular weight between about 200 and 6,000, and (b) an oil-soluble compound corresponding to the formula



where Alk is an alkyl radical, n is an integer from 1 to 3, $(Alk)_n$ containing from 8 to 18 carbon atoms, Ar is a member selected from the group consisting of the naphthalene radical and its methyl and hydroxyl monosubstituents, and M is an alkaline earth metal selected from the group consisting of calcium and magnesium, said ingredient (a) and said ingredient (b) being present in proportions to each other ranging from about 9 to 1 to about 1 to 9.

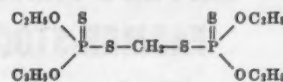
2,872,369

Vinyl Lower Alkyl Ether-Maleic Anhydride Copolymer as a Pesticide Solubilizer. Patent issued Feb. 3, 1959, to Gerald Robinson, Forest Hills, N.Y., assignor to General Aniline & Film Corp., New York. A solution having a pH of not less than about 6.5 comprising a lower aliphatic alcohol of from 2 to 4 carbon atoms, a partial alkyl ester having from 1 to 4 carbon atoms in the alkyl radical of a copolymer of a vinyl alkyl ether having from 1 to 4 carbon atoms in the alkyl radical with maleic anhydride, said partial ester containing from about 35% to about 50% ester groupings therein and a compound selected from the group consisting of heavy metal organo compounds and organo sulfur compounds, said compound being present in excess of the amount which is normally soluble in the said lower aliphatic alcohol.

2,873,228

Pesticidal Phosphorus Esters. Patent issued Feb. 10, 1959, to Joe R. Willard and John F. Henahan, Mid-

deport, N.Y., assignors to Food Machinery and Chemical Corp., New York. A method for controlling mite and insect pests and ova which comprises contacting said pests and ova with an effective concentration of the compound bis(S-[diethoxyphosphinothioyl]mercapto)methane. Bis(S - [diethoxyphosphinothioyl]mercapto)methane, having the formula



Industry Trade Marks

The following trade marks were published in the Official Gazette of the U.S. Patent Office in compliance with section 12 (a) of the Trademark Act of 1946. Notice of opposition under section 13 may be filed within 30 days of publication in the Gazette. (See Rules 20.1 to 20.5.) As provided by Section 31 of the act, a fee of \$25 must accompany each notice of opposition.

Blubag, in hand-drawn letters, for agricultural hydrated lime. Filed Nov. 5, 1956, by The Woodville Lime Products Co., Toledo, Ohio. First use Aug. 22, 1956.

Design, a hexagonal block in which Union Carbide is printed in black capital letters, for chemical compositions for use in the garden and on the lawn to control crabgrass, weeds and plant diseases and for use in the home and garden and on the lawn to control insects. Filed May 26, 1958, by Union Carbide Corp., New York. First use Feb. 7, 1958.

Zohar, in capital letters, for weed killing compounds. Filed June 6, 1958, by E. I. du Pont de Nemours & Co., Wilmington, Del. First use May 22, 1958.

Aero, in capital letters, for urea fertilizer compound. Filed Dec. 30, 1957, by American Cyanamid Co., New York. First use Dec. 5, 1957.

Stauffer, in capital letters, for fertilizers, plant hormones and soil treating agents. Filed March 24, 1958, by Stauffer Chemical Co., San Francisco. First use in 1889.

Design, drawing of a full hand fertilizer spreader with the word Vitex in block letters above, for fertilizers. Filed July 7, 1958, by Dynamic Industries, Inc., Pittsburgh, Pa. First use Sept. 16, 1957.

American Cyanamid to Build New Portland Office

PORTLAND, ORE. — American Cyanamid Co., Portland, will move this spring to a new warehouse and office building now under construction on N. W. Yeon Ave. in Davis Industrial Park.

K. H. Tate, branch manager, said the new building will consolidate branch sales and distributing activities in the Northwest area for seven of American Cyanamid's divisions and subsidiaries.

The \$350,000 structure will be a one-story, 36,700 square foot brick and steel building occupying an attractively landscaped two-acre site. Exterior will be finished in matched brick and Vermont slate. Extensive use of formica plastic materials will be made in interior finishing.

A 7,000 square foot section will be used as office space. The remainder of the building will be a warehouse, divided into sections for handling Cyanamid's pharmaceutical and chemical products.

Cyanamid's branch office, with some 30 employees, presently is located at 3030 N.W. 29th Ave.

Heads Agronomists

STATE COLLEGE, MISS. — Dr. Louis N. Wise of Mississippi State College has been elected as the new president of the Mississippi section of the American Society of Agronomy. Dr. Wise succeeds Earl H. Bailey of Starkville. Other officers elected include O. V. Clark of Mississippi State University, first vice president; Dr. Peter G. Hogg of Stoneville, second vice president, and Dr. C. Dale Hoover of Mississippi State University, secretary-treasurer.

Drouth Again Threat To Utah's Farmlands

SALT LAKE CITY — Drouth, a familiar spectre that has haunted Utah farmers periodically for the past decade, again is raising its threat over the state's farmlands.

Particularly hard-hit is central and southern Utah where snowpack measurements show a record low water content. Across the state the water supply outlook ranges from 34 to 85% of average.

The U.S. Soil Conservation Service, which has just completed measuring Utah's water supply, reports that some sections of the state must have twice as much snowfall as normal during the balance of the winter even to bring the outlook up to average.

Utah has encountered a particularly mild winter. Only during the past month have storms of any appreciable proportions hit the state where the average yearly rainfall is only 13.18 in.

As a result of the light rainfall farmers are almost solely dependent upon irrigation water accumulated in snow packs over the mountains during the winter months.

An example of southern Utah's plight is measurements on the Duck Creek course on the Sevier River above central Utah's town of Richfield. There only ½ in. of moisture was recorded compared with a normal of 10.1 in.

Water content at the Strawberry Divide on the Duchesne River was 4.2 in., compared to a normal 13.8 in.

The one bright spot in southern Utah's water picture is storage in reservoirs, which is well above last year. The accumulation is the result of an upturn in southern Utah's water fortunes during 1957 and 1958 after a biting seven-year drouth.

Two of the three major reservoirs in southern Utah are above the 15-year normal. The Otter Creek Reservoir currently is storing 30,400 acre ft. of water compared to only 16,900 ft. a year ago. The 15-year average is 28,100 ft., while reservoir capacity is 52,500 ft.

Piute Reservoir storage was up to 51,700 ft. this year compared to last year's 34,000 ft. and the 15-year average of 43,200 ft.

Most dismal spot was the Sevier Bridge Reservoir, by far the largest of the three Sevier River storage units. There a total of 75,600 acre ft. of water was stored as of Feb. 1, a substantial drop from last year's 81,700 ft. and far below the long-term average of 136,400 ft. Capacity of this reservoir is 236,000 ft.

Rocky Ford Reservoir on southern Utah's Beaver River also was down. Some 12,400 acre ft. was stored on Feb. 1, compared to last year's 16,700 ft. However, the 15-year average is only 14,800 ft.

Stream runoff in the area also is down considerably. Runoff for the Virgin River is forecast at 38% of normal. Coal Creek runoff near Cedar City is seen at less than half of normal.

Stream runoff, precipitation and snow pack measurements in northern Utah are considerably brighter than over most of the southern half of the state. January precipitation in the Logan area was 70% of normal, while storms piled up 110 to 150% of normal precipitation in canyons east of Salt Lake City.

Weber River streamflow was forecast at 75 to 80% of average. Northern Utah's Echo Reservoir is storing 22,640 acre ft. of water compared to 35,700 a year ago, but Bear Lake on the Utah-Idaho border is up 5,000 acre ft. from a year ago. Other figures for stream runoff, reservoir and lake storage are near these averages.

ROOF COLLAPSES

BARABOO, WIS. — Heavy snow caused the roof of the fertilizer warehouse at the Farmers Union Co-op here to collapse. No one was in the building at the time.

Covers Field With Lime or Pelletized Fertilizer in ½ the Time!

NEW LEADER L-52S SPREADER

- 25 H.P. Engine drives twin 24" spinners for widespread applications!
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Harry Sidles

JOINS VELSICOL—Roger Roth, sales manager of Velsicol Chemical Corp.'s agricultural chemicals division, has announced the appointment of Harry Sidles to the post of assistant sales manager of the agricultural division. Mr. Sidles was formerly with Rohm & Haas Co.

Bright Cotton Outlook Seen in North Carolina

RALEIGH, N.C.—Cotton can become a great money-making crop in North Carolina once more, J. A. Shanklin, research specialist for North Carolina State College, told a North Carolina Farm Bureau cotton conference here.

Predicting that Tar Heel farmers can produce an average of more than 1,000 lb. per acre with proper fertilization, proper plowing and good management, Mr. Shanklin called for demonstrations in every cotton-growing county to show the possibilities.

The specialist cited instances in Cleveland County which saw demonstration farmers increase cotton production from 350 lb. of lint to more than 1,100 lb. in one year. Mr. Shanklin said farmers can easily compete with the California growers who have irrigation to assist them with their crops.

FORUM

(Continued from page 3)

sequence, while in a factory all of the production operations can be going on at the same time.

Space requirements are larger on a farm, he said, since the farmer cannot take all of his production units through one space unit as on a factory production line. And a farmer does not have as close control of either quantity or quality in his production. There has been a lack of definite specifications for farm units of production, but a real change has been taking place in this area.

Farmers now have much better control over quality than before, and are increasingly taking advantage of their chances to standardize quantity and quality of production, Dr. Wills said.

In the future, farm mechanization will tend less to reduce hours of labor for each acre of production and tend more toward increasing the numbers of units of production per acre, the farm management specialist said.

C. B. Baker, also professor of farm management at Illinois, discussed some of the factors that favor today's increases in farm specialization. These he listed as technological changes that require more specialization, such off-farm influences that favor specialization as the fertilizer and feed industries, increases in farm size that make for less flexibility in production, and increasing farm incomes that result in less pressure from smaller farm enterprises.

California Association Announces Meeting Dates

SAN MARINO, CAL.—The California Fertilizer Assn. has announced that its 36th annual convention will be held Nov. 9-11 at the Fairmont Hotel, on Nob Hill, in San Francisco. Six hundred are expected to attend from the U.S., Canada and Mexico, according to Howard H. Hawkins, association president.

The CFA convention is held in northern California in odd-numbered years and in southern California in even numbered years, and the specific location is chosen by action of the board of directors.

Thomas Fleischman of St. Regis Paper Co., San Francisco, is chairman of the convention program committee. Serving with him are Harold E. Ferguson, Balfour, Guthrie & Co., Ltd.; William Jaqua, California Spray-Chemical Corp., Richmond; Robert Mussetter, Rocca-Covi, Inc., San Francisco, and Donald L. Watts, Garden Valley Fertilizer Co., San Jose.

The entertainment committee is composed of Robert E. Segerdell, chairman, Hercules Powder Co., San Francisco; Alden C. Carey, Sunland Industries, Inc., Stockton, and Robert E. Minahan, Crown-Zellerbach Corp., San Francisco.

Mrs. A. L. Diebolt, Los Altos, is chairman of the ladies committee, and she is being assisted by Mrs. D. W. Galbraith, Woodland, and Mrs. Mordy S. Rose, Salinas.

Reminder Issued on Raising Nutrient Minimum

LITTLE ROCK—Henry DeSalvo, head of the feed, fertilizer and pesticide division of the Arkansas State Plant Board, has issued a reminder of a recommendation that the minimum plant food nutrients per 100 lb. in mixed fertilizer for distribution in Arkansas be raised from 20 to 24.

The recommendation, to become effective next July 1, was made by the board of directors of the Arkansas Plant Food Educational Society to the Arkansas Plant Board.

Mr. DeSalvo said that if the recommendation is adopted it will mean that 6-12-6 would replace 5-10-5 as minimum for the 1-2-1 ratio and that 5-10-5 no longer could be sold in the state.

No date has been set for the 1959-1960 ratio and grade list hearing, but it likely will be held in late May or early June, Mr. DeSalvo said.

Great Western Chemical Acquires Portland Building

PORTLAND, ORE.—Great Western Chemical Co. of Portland and Seattle has acquired a 60,000 sq. ft. industrial plant at N.W. Yeon and 35th Ave. here. Great Western is regional distributor of agricultural and industrial chemicals. The chemical firm's affiliate, Great Western Properties, Inc., was actual purchaser, paying \$400,000 for the modern plant.

The reinforced concrete building includes 5,000 sq. ft. of office space. It is fully sprinkled, and is served by a terminal company spur track accommodating ten rail cars.

William Calder McCall is president and Richard H. Wilson, vice president and general manager of Great Western Properties and Great Western Chemical Co., which will move to the newly purchased plant from present quarters at 2133 N.W. York St. The move represents a sizable expansion for the Portland firm.

Great Western maintains affiliate operations in Eugene, Pendleton, Seattle and Spokane, representing a total of more than 50 chemical manufacturing concerns.

Books on Fertilizers And Their Use

FOREST FERTILIZATION

Donald P. White and Albert L. Leaf

A bibliography, with abstracts, on the use of fertilizers and soil amendments in forestry. Useful to those interested in prospects of a plant food market in forest areas, the book resulted from a special two-year study of the college of forestry, Syracuse University, Syracuse, N.Y., under sponsorship of the Nitrogen Division of Allied Chemical & Dye Corp. The book contains 300 pages, 700 references, with abstracts, and covers the period from 1865 through 1956. In-**\$3.00**

SOIL FERTILITY AND FERTILIZERS (1956)

Samuel L. Tisdale and Werner L. Nelson

An advanced college text, for juniors and seniors, following backgrounding course in soils. Covers elements required in plant nutrition, their role in plant growth, and the soil reactions to these nutrients. Several chapters on manufacture, properties and agronomic value of fertilizers and fertilizer materials. Latter part covers soil fertility evaluation and use of fertilizers in sound management program. 430 pages, cloth bound**\$7.75**

PLANT REGULATORS IN AGRICULTURE

Dr. Harold B. Tukey

Published September, 1954. A text book giving background material for county agents, farmers, citrus growers, nurserymen, gardeners; providing fundamentals and general principles; covers encouragement of roots by plant regulators, control of flowering and fruit setting, parthenocarp, abscission, prevention of preharvest fruit drop, delaying foliation and blossoming, maturing and ripening, inhibition of sprouting and weed control. Brings together specialized knowledge of 17 authorities in the field, with two chapters written by Dr. Tukey, head of department of horticulture at Michigan State College. 269 pages**\$6.50**

THE CARE AND FEEDING OF GARDEN PLANTS

Published jointly by the American Society for Horticultural Science and the National Plant Food Institute.

An entirely new, one-of-a-kind book. It is designed to acquaint readers with nutritional deficiency symptoms or "hunger signs" of common yard and garden plants including lawn grasses, shrubs, flowers, garden vegetables, and cane and tree fruits. It stresses plant "feeding," or what makes plants grow. Sixteen of the nation's leading horticultural authorities collaborated in its preparation. Cloth bound, 390 pages of text and illustrations including 37 pages in full color**\$3.00**

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A. Carl Leopold

A 366-page book, complete with bibliography, appendix, and index, discusses the fundamental and applied aspects of growth hormone and synthetic auxin action in plants. These are of interest to all workers in agricultural chemicals—for weed control, flowering control, fruit set, flower or fruit drop and plant propagation. The text is divided into two sections, (1) fundamentals of auxin action, and (2) auxins in agriculture. These cover developmental effects of auxins, the physiological and anatomical effects of their application, the chemical nature of growth regulators, and methods of applying auxins and their persistence in plants and soils. Other subjects covered: rooting, parthenocarp, flower and fruit thinning, control of pre-harvest fruit drop, flowering, dormancy and storage, herbicides, miscellaneous uses of auxins, and potentials of auxins and auxin research. Published by University of California Press.**\$5.00**

ECONOMIC AND TECHNICAL ANALYSIS OF FERTILIZER INNOVATIONS AND RESOURCE USE

By E. L. Baum, Earl Heady, John Pesek and Clifford Hildreth.

This book is the outgrowth of seminar sessions sponsored by TVA in 1956. Part I—Physical and Economic Aspects of Water Solubility in Fertilizers. Part II—Examination of Liquid Fertilizers and Related Marketing Problem. Part III—Methodological Procedures in the Study of Agronomic and Economic Efficiency in Rate of Application, Nutrient Ratios and Farm Use of Fertilizers. Part IV—Farm Planning Procedures for Optimum Resource Use. Part V—Agricultural Policy Implications of Technological Change. It presents new methodological techniques for more efficient handling of research problems related to fertilizers and provides more meaningful answers to problems of practical application**\$4.50**

HUNGER SIGNS IN CROPS—Second Edition

A symposium—published jointly by the American Society of Agronomy and the National Plant Food Institute.

A comprehensive study of nutrient-deficiency symptoms in crops compiled by 19 of the leading authorities in the field. It is being widely used by college professors, research and extension specialists, industrial chemists and agronomists, county agents and teachers of vocational agriculture. Many farmers have found it of particular value in planning their fertilizer programs. Cloth bound, 390 pages, 242 illustrations, including 124 in full color**\$4.50**

USING COMMERCIAL FERTILIZER (1952)

Malcolm H. McVickar

Dr. McVickar is chief agronomist of the National Fertilizer Assn. The book deals specifically with commercial fertilizers; how it is produced and how to use it. It is non-technical. It includes chapters on how to measure fertility of soils, secondary and trade-element plant foods. 208 pages, 104 illustrations, cloth bound**\$3.50**

COMMERCIAL FERTILIZERS, Their Sources and Use—Fifth Edition (1955)

Gilbert H. Collings

Based upon the author's practical experience as an expert station agronomist and teacher, and incorporating information on recent developments by agronomists, chemists, engineers and fertilizer manufacturers. Authoritative on problems concerning commercial fertilizers and their use in gaining larger yields. 160 illustrations, 522 pages**\$8.50**

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Standard of Ohio, Atlas Powder Co. Form Solar Nitrogen

CLEVELAND—Organization of Solar Nitrogen Chemicals, Inc., a new company jointly owned in equal proportions by the two parent companies, was announced last week by Charles E. Spahr, president of the Standard Oil Co. (Ohio), and by Ralph K. Gottshall, president of Atlas Powder Co.

Solar Nitrogen Chemicals, Inc., will engage in the manufacture and sale of agricultural and industrial chemicals; will acquire all of Sohio's present ammonia and related petrochemical facilities at Lima, Ohio; and will succeed to the business heretofore conducted by Sohio in these products.

The Sohio Chemical Co., a wholly-owned subsidiary of the Standard Oil Co. (Ohio), will continue to operate the plant and to act as sales agent for the new company. Edward F. Morrill, president of Sohio Chemical Co., has been elected president of Solar Nitrogen Chemicals, Inc., and Edward J. Goett, executive vice president of Atlas Powder Co., has been elected vice president. There will be no change in personnel, product line, service policies or sales territories.

Sohio has engaged since 1955 in the manufacture and sale of ammonia, nitrogen solutions, urea, nitric acid and dry ice, at its petrochemical plant next to its Lima Refinery. Atlas Powder uses ammonia in its explosive and chemical activities.

In commenting on the organization of the new company, Mr. Spahr said that Sohio's petrochemical plant has been operating profitably, and that it appears advantageous at this time to add participation by a company that is a substantial consumer of ammonia.

Mr. Gottshall said that the expansion and further diversification of operations through the acquisition of an interest in a profitable modern ammonia plant is in accordance with Atlas Powder Co.'s forward planning.

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TEXAS TECH

(Continued from page 1)

Wiese, Texas Department of Agriculture, said. Produced by American Chemical Co., the compound has been applied 20 lb. per acre but a new material in prospect may be effective in rates as low as 10 lb. an acre, he reported.

Jack King of the Lubbock experiment station described a fungicide—Thiram—that both protects sorghum seed from molding in the field during damp weather and repels birds.

Systemic insecticides for livestock administered in feeds was reported by Paul Marion of the Spur experiment station. While still experimental, the systemic insecticides have been effective in controlling cattle grubs. The station has also been administering tranquilizers in cattle feed.

Texas farmers and ranchers are entering 1959 operations with about 35% more cash receipts than this time last year but face narrower profit margins in the future.

That's the agricultural outlook for 1959, according to John G. McHaney, Texas agricultural extension economist, who opened the first session.

"Ranges and pastures are in good condition, and Texas livestock are in better condition than they have been since 1942," Mr. McHaney said. "However, the main problem facing agriculture is that production is over expanded in terms of available markets. With normal weather conditions, we can expect another large output of agricultural products this year."

Chemical dealers have a responsibility to the financial institution backing a fertilizer program as well as to their farmer customers, John E. Key, a Lubbock banker, said.

"We feel our role in financing farm chemicals is to study the farmer's whole program and base our recommendations on what it will do for him—not what it did for the man who has a different soil type, more or less water and a different financial foundation," he stated.

Responsibility for financing a fertilizing program is three-fold—that of the farmer, chemical dealer and banker working together on a program beneficial to all, he added.

"The current farm problem has never been better for the fertilizer industry than it is now," said F. E. Hartzler, small business specialist from Kansas State Teachers College at Emporia.

"The farmer who wants to stay on the farm will have to become efficient, and to do this he will have to improve the soil," he asserted.

Mr. Hartzler advised dealers not to just sell fertilizer, but to sell a chance to stay on the farm with the use of fertilizer as a means to that end.

He defined the art of merchandising as "finding out how to give people what they want through merchandise."

"Merchandising—the key to success—involves the community, the merchant and the product," said Mr. Hartzler, whose topic was "The Dealer's Part in Getting the Job Done."

Greater protection of the public health from pesticides has been brought about by the Miller Bill, passed by Congress in 1954, R. L. Horst reported. He is chief of the Denver district of the Food and Drug Administration.

Mr. Horst said the bill—an amendment to the Federal Food, Drug and Cosmetic Act—has improved and speeded up ways of regulating the amount of pesticide residue which may remain on raw agricultural products after use of pesticide chemicals.

The amendment recognizes that pesticide chemical sprays and dusts are necessary to assure a continuing supply of high quality foods in this

country, said Mr. Horst.

It takes about the same amount of money to raise a top crop as to raise an average one according to data presented by B. L. Mitchelson and Dr. R. L. Balser of Spencer Chemical Co., Kansas City.

Efficiency in cotton production is the employment of effective operations to result in greater earnings, not greater yields, said Mr. Mitchelson, who represents the chemical company at Tyler, Texas.

Dr. Balser emphasized that the wise use of fertilizer can mean more profit on fewer acres and fewer total bales produced—two important features in these times of allotments and surpluses. The profit comes from the better quality of cotton.

A recent survey indicates that fear of loss because of climatic factors is one big reason why farmers do not use the optimum rates of fertilizer, Dr. Balser said.

"The use of an efficiency improving tool like fertilizer can actually protect one's investment in 'fixed costs' plus raise his profit potential," he stated.

Agricultural chemicals dealers have a great obligation to the farmer to know and advise correctly about fertilizing programs, said Ray Joe Riley, Dimmitt, Texas, plant breeder, in speaking on farmers' problems with chemicals.

"The farmer's greatest problem with chemicals is his own lack of information and education in the use, management and safety precautions necessary for advantageous use of fertilizers," he said.

He noted that a recent nationwide survey showed that 32% of those polled relied on their local dealer for fertilizer information while 18% asked their county agent.

"The results of this survey point up the tremendous responsibility the farmer places on his local dealer. This dealer, in addition to his

many other jobs, is going to have to stay ahead of the products he is selling," Mr. Riley said.

"Nearly all farmers have some limit to the amount they can spend for fertilizer," observed Dr. J. Wayland Bennett, head of Texas Tech's agricultural economics department.

Dr. Bennett pointed out that even if capital is not limited, elements of risk and uncertainty preclude applications that would maximize returns-per-acre.

"Once the total fertilizer budget for a crop has been decided upon, farmers are interested in the combination of fertilizer and acreage that will maximize profits on the crops for which investments in fertilizer are made," he said.

"There are many production factors involved in growing a crop, but the increased use of fertilizer has played a major part in meeting production needs and in lowering unit production costs," he commented.

Dr. Bennett said a recent nationwide study of fertilizer use on different crops and returns-per-acre concluded that in contrast to high average returns-per-acre, high marginal returns occur at low rates of application while low marginal returns occur at high rates of application.

An increased use of chemicals to effect a nematode control program in seven counties of the South Plains of Texas is in the future, L. L. Ray, agronomist at the Texas experiment station near Lubbock, predicted at the conference. Most widespread damage is from the root-knot nematode, but root-lesion nematodes also damage cotton in this area.

Mr. Ray estimated cotton losses from nematode damage at between 1 and 2%. Losses are confined mainly to irrigated soils with a previous cropping history of continuous cotton, alfalfa or vegetable crops.

He advised that nematode control is possible through chemical fumigation of soil, crop rotation or the planting of resistant varieties of cotton. Because soil fumigation costs are relatively high—\$15 to \$20 per acre—to do so would not be profitable on cotton unless losses are relatively high, Mr. Ray said.



TEXAS MEETING—Checking the program (top photo) at the sixth annual Agricultural Chemicals Conference held at Texas Technological College in Lubbock Feb. 11-12 are, left to right, Dr. A. W. Young, Texas Tech agronomy department head; Dr. Ralph Horst, chief of the U.S. Food and Drug Administration in Denver, Colo.; John Key, Lubbock banker, and Dr. Gerald W. Thomas, dean of the School of Agriculture at Texas Tech. In the bottom photo, B. L. Mitchelson, Spencer Chemical Co. representative in Tyler, Texas, and Dr. R. L. Balser from the firm's main office in Kansas City, are shown giving an illustrated lecture to the more than 300 in attendance at the conference.

Corn Borer Damage In Virginia Noted By VPI Entomologist

BLACKSBURG, VA.—Damage to crops from the European corn borer was one of the heaviest on record in Virginia last year.

In his summary of insect activities in Virginia last year, Arthur P. Morris, associate entomologist at Virginia Polytechnic Institute, notes that corn borer larvae caused heavy injury to sweet corn and field crops in all parts of the state. They also caused trouble in truck crops in areas of eastern and southeastern Virginia and in the eastern shore counties. Other crops and ornamentals were damaged to some extent.

Value of alfalfa weevil control in Virginia last year was estimated at \$2,652,000. Weevils now infest about 245,000 of the total 280,000 acres of alfalfa in Virginia, and chemicals were applied on about 195,000 acres in 1958. Infestations were too light to justify controls on the 50,000 acres infested but not treated, but much of this acreage will need to be treated this year.

Corn earworms caused extensive injury to field and sweet corn in all areas, but their damage to soybeans, peanuts and sorghum was less than during the preceding three years.

Armyworm damage to field and sweet corn, small grains, grasses, alfalfa and sorghum varied from light to severe, but infestations were not general.

Fall armyworms caused scattered damage. Meadow spittlebugs were heavy on pastures throughout Virginia, and were especially bad on alfalfa and clover in southwestern counties. Controls will be needed in most fields in southwest Virginia this spring.

Pine sawfly larvae caused the most consternation in the pine tree sections, and timber was also bothered to some extent by white pine weevils, pine tip moths, turpentine beetles and southern pine beetles.

Japanese beetles made inroads on ornamentals in several parts of the state. Adult beetles on weeds in fields of small grains passed through threshing machines and into the grain in some areas in eastern Virginia and in Shenandoah County, thus creating a quarantine problem.

Hornworms, tobacco flea beetles, budworms, cutworms and green peach aphids were of minor importance on tobacco, primarily because of the effectiveness of controls.

Rosy apple aphids were plentiful in northern Virginia apple orchards during June and required more than usual efforts to prevent injury. They accounted for loss of 1/4 of the crop in some orchards where controls were not applied or were incorrectly applied.

Harold Holden Named President of Gilman

NEW YORK—Charles Gilman, chairman of the board and chief executive officer of Gilman Paper Co., New York, has announced that Harold Holden, presently vice chairman of the board of Standard Packaging Corp., has been elected president and general manager of Gilman Paper Co. effective Feb. 1.

At the request of R. Carl Chandler, chairman of the board of Standard Packaging Corp., Mr. Holden will continue as a director of Standard Packaging Corp. and as a member of its executive committee.

The other principal officers of the Gilman Paper Co. are Howard Gilman, executive vice president—administration; Charles Gilman, Jr., executive vice president—operations, and Herman Gilman, secretary. Kraft Bag Corp. is a subsidiary.

Suburban Growth Forces Lubbock Station Move

LUBBOCK, TEXAS — The rapid expansion of suburban home building in recent years is forcing the Lubbock Agricultural Experiment Station to move elsewhere. Founded in 1910, the station at one time was considered to be in a farming area. Now, however, it is almost surrounded by residential buildings, and the 160-acre tract will be sold in order not to retard the city's expansion program.

A new location has not been decided upon, according to Charles Fisher, station superintendent, but the money from the sale will be used to buy a 320-acre tract somewhere in this area.

The 160 acres was large enough at one time, but now a stepped-up program on vegetable production, water conservation and other tests necessitates getting a larger block of land.

Several groups from other coun-

ties have contacted station officials about moving the station out of Lubbock County, but Mr. Fisher says these chances are very slight.

Organization Meeting of Minnesota Group Planned

ST. PAUL—An organization meeting of the Minnesota Fertilizer Industry Assn. will be held in the Soil Science Bldg., University of Minnesota St. Paul Campus, at 7 p.m. Feb. 26.

It is planned to vote on adoption of a proposed constitution and to elect officers and members of the executive committee. Robert D. Munson, American Potash Institute, St. Paul, is acting secretary of the group.

NORTH CAROLINA SALES

RALEIGH, N.C.—Sales of fertilizer in North Carolina during December, 1958, amounted to 33,256 tons, reported L. Y. Ballentine, commissioner, North Carolina Department of Agriculture. This was 2,069 tons more than December, 1957.

\$15 Million Utah Farm Loss Blamed on Weeds

LOGAN, UTAH—Weeds in Utah have caused \$15 million in agricultural losses, declared Louis Jensen, state extension service agronomist.

Mr. Jensen, in a statement issued prior to a statewide weed control conference Feb. 26-27 in Salt Lake City, estimated that farmers in Wasatch County alone have lost \$625 per farm from weeds.

Weed control can lead to increased crop yields, he said. He cited recent studies which show that for every dollar spent on controlling weeds, four dollars are returned in the form of higher productivity and quality.

The weed conference will include such discussions as "Controlling Weeds on Rangelands, Croplands and Along Canals and Roadways," "How Chemicals Kill Weeds," "Weed Control in Vegetable Crops and Orchards" and "What is a Good County Weed Program."

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ANOTHER COMMUNITY AROUSED . . .

Resistance Voiced to Government Spraying Program to Eradicate White-Fringed Beetle

TOO MUCH public sentiment is being directed against spray programs in various communities around the nation. Most publicized, of course, has been the resistance to the USDA's gypsy moth eradication program on Long Island, N.Y., which was finally brought into court for a settlement last year. A favorable decision there, however, has not stopped nor scarcely slowed the clamor against spray projects.

Other areas in which pressure is being exerted against killing insect pests on the grand scale include locations far removed from Long Island. One such is the Memphis, Tenn., community, some segments of which have become greatly exercised over a USDA program against white-fringed beetle. The object is to eradicate this pest completely.

However, protests are being heard from sportsmen, garden club enthusiasts and some conservationists. These outbursts came on the heels of an announcement by USDA that an eradication program is necessary to prevent the white-fringed beetle from spreading into presently beetle-free farm lands. It was pointed out that the populations of this pest were greater in the Memphis area than in all the remainder of the state and that a program to halt the beetle at that point would be relatively easy.

A blow-by-blow account of the protests was carried by the Memphis Press-Scimitar, using many familiar phrases heard in other similar situations. Stories appearing in the daily paper say "... spraying could kill many birds which might pick up the poison pellets which resemble small grain ... the pellets will also poison drinking water if they fall into watering vessels and dogs and cats would get sick and possibly die if they drank it."

One story reported the president of the West Tennessee Sportsman's Assn. was appointing a committee to draft protests against "indiscriminate use of lethal insecticides" not only in Memphis but throughout the Deep South.

Happily, however, there were at least two voices acting as calming agents on the troubled waters. Appearing before one meeting of the directors of the Sportsman's Assn. was Harrold B. Jones, American Smelting & Refining Co., and G. H. Johnson, district manager of California Spray-Chemical Corp., who told the group that the public is unduly alarmed over the situation. They pointed out that agriculture is the basis of the nation's economy as well as being of utmost importance to the local community and that it should therefore be given every consideration.

Some of the directors are reported to have taken issue with the facts presented by Mr. Jones and Mr. Johnson on the relative importance of bird and small animal life, arguing that farm production is already too great. In other words, why worry about a few little old white-fringed beetles?

At the same time, the Memphis Garden Club also appointed a committee to take action in the name of the club. The ubiquitous Dr. Robert Cushman Murphy, New York naturalist who won prominence in the Long Island fray last year by viewing with alarm the hazards of pesticides, was on hand for a talk before the Memphis group. Continuing his favorite theme, he told the Tennesseans that human illness has been caused by

certain insecticide sprayings and that milk herds have been contaminated.

Among the local people taking up the cudgel against controlling the white-fringed beetle was George J. Madlinger, landscape architect, who insists that the materials proposed for use in the program are too toxic. He was quoted in the paper as predicting such applications would result in skin rash among home owners. He said he also thinks there has been too much indiscriminate spraying of farm crops throughout the south and that he knew of instances where crop spraying had been so heavy that motorists traveling on main highways had suffered eye irritations.

The Press-Scimitar recently carried a story telling how home owners may prevent having their yards sprayed. The story instructed owners to forbid spray crews from treating their lawns and the request would be honored. The paper also reported that some families, where both husband and wife are employed and consequently may not be at home, are putting up signs on their front lawns which read: "This property is not to be sprayed with any poison."

This factual recital is presented to illustrate once more that the public relations battle of the pesticide trade is still far from being resolved. The industry has made great strides toward an educational approach to the problem, but obviously the continuing need is that of reaching down to the "grass roots."

We are happy to note that at least two representatives of the pesticide trade were on hand to present facts to dissenting groups. However, additional voices are needed to speak out on local levels where pressures against spray programs originate.

Maintain Profits to Render Needed Customer Service

ON THE SURFACE it would appear odd that any industry would have to remind itself of the necessity of making a fair profit in order to maintain itself and to be in a position to render necessary service to its customers.

Yet, the subject of profit, or perhaps the lack of same, was brought out strongly in a recent talk by W. L. Dixon, president of Western States Chemical Corp., San Francisco, at a recent meeting of the California Fertilizer Assn. He said that the matter of profit has a bearing on the entire future trend of granular material as well as other products of the industry.

"Profit somehow has become a dirty word in our industry, and numerous schemes are continually presented on how to supply material to farmers at cost.

"Without a fair profit, research costs, development costs, and new plant costs cannot be supported, nor will there be the incentive to develop new products and new processes," he said.

"If the main objective of our industry is, as I believe it should be, to continue to supply farmers with better and more efficient products, the industry needs a fair return on its investment to encourage the development of newer and better products, more efficient distribution, and thus be of real service to the farmer on a long range basis."



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LAWRENCE A. LONG

Editor

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MEETING MEMOS

March 3-4—Western Cotton Production Conference, Hotel Westward Ho, Phoenix.

April 29-30—Symposium on transportation, regulation and packaging of chemical products, sponsored by the Manufacturing Chemists' Assn., Engineering and Scientific Center, Cleveland, Ohio.

July 29—Annual Kentucky Fertilizer Conference, Guilford Theater, University of Kentucky campus, Lexington, Ky.

Oct. 21-23—National Agricultural Chemicals Assn., 26th annual meeting, French Lick-Sheraton Hotel, French Lick, Ind., Lea S. Hitchner, executive secretary.

Nov. 9-11—California Fertilizer Assn., 36th annual convention, Fairmont Hotel, San Francisco.

Meeting Memos listed above are being listed in this department this week for the first time.

Feb. 24—Western Washington Fertilizer Dealers Meeting, N. W. Washington Experiment Station, Mt. Vernon, Wash.

Feb. 24-25—Alabama Pest Control Conference, Alabama Polytechnic Institute, W. G. Eden, Secretary-Treasurer, Alabama Association for Control of Economic Pests, Alabama Polytechnic Institute, Auburn, Ala.

March 4-5—Annual Weed and Insect Conference, Fanner Park, Grand Island, Neb.

March 17—Western Agricultural Chemicals Assn. spring meeting, Hotel Miramar, Santa Barbara, Cal. C. O. Barnard, executive secretary.

March 19-20—Oregon Feed and Seed Dealers Assn., annual convention, Multnomah Hotel, Portland, Ore.

March 25-27—North Central Branch, Entomological Society of America, Annual Meeting, Neil House Hotel, Columbus, Ohio, C. W. Wingo, 102 Whitten Hall, University of Missouri, Columbia, Secretary-Treasurer.

June 9-10—Seventeenth Annual Convention of the Association of Southern Feed and Fertilizer Control Officials, Velda Rose Motel, Hot Springs, Ark.; Maurice Rowe, Virginia Department of Agriculture, 1122 State Office Bldg., Richmond 19, Va.

June 14-17—National Plant Food Institute, Annual Convention, the Greenbrier, White Sulphur Springs, W. Va.

June 29-30—Seventh Annual California Fertilizer Conference, University of California campus, Davis,

Cal. J. H. Nelson and Earl R. Mog, co-chairmen.

July 7-9—Regional Fertilizer Conference, co-sponsored by the Pacific Northwest Plant Food Assn. and state colleges and universities in the area, Winthrop Hotel, Tacoma, Wash.

Oct. 14-16—Pacific Northwest Plant Food Assn. Annual Convention, Chinook Hotel, Yakima, Wash.

Nov. 4-6—Fertilizer Industry Round Table, Mayflower Hotel, Washington, D.C. Dr. Vincent Sauchelli, National Plant Food Institute, chairman.

Nov. 16-20—National Aviation Trades Assn., 20th annual convention, New Orleans, La.

Aircraft in Agriculture Short Course Plans Told

DAVIS, CAL.—A short course on use of aircraft in agriculture, mosquito control, fire fighting and forestry will be given March 3-6 at the University of California, Davis.

The agricultural aircraft pilots' and operators' short course will cover introductory information in entomology, botany, plant pathology, and horticulture, as well as a treatment of the physical aspects of aircraft equipment for the distribution of sprays, dusts, aerosols, seed and fertilizers. Laws and regulations, insurance problems, claims adjustment and health and safety procedures will be featured. A laboratory demonstration will include mixing of chemicals, agitation requirements, calibration of aircraft equipment for proper dosages and coverage and distribution of chemicals in the swath of the plane.

The course, sponsored by the college of agriculture under the auspices of university extension, will include speakers from the faculty at Davis and the agricultural aircraft industry.

\$2,673 Grant Awarded For California Research

DAVIS, CAL.—The departments of irrigation and soils and plant nutrition at the University of California at Davis have received a \$2,673 grant from the National Plant Food Institute for basic research on soil moisture-fertility relationships. This is the second of three annual grants received jointly by the two departments for support of this research.

Ben Zur, graduate student, who is carrying on this research, came to Davis in 1957 after receiving his master's degree from Oklahoma State University. These experiments are expected to provide a new insight into the complexities of plant response to applied fertilizers under various soil moisture conditions.

Classified Ads

Classified advertisements accepted until Tuesday each week for the issue of the following Monday.

Rates: 15c per word; minimum charge \$2.25. Situations wanted, 10c a word; \$1.50 minimum. Count six words of signature, whether for direct reply or keyed card this office. If advertisement is keyed, care of this office, 20c per insertion additional charged for forwarding replies. Commercial advertising not accepted in classified advertising department. Advertisements of new machinery, products and services accepted for insertion at minimum rate of \$10 per column inch.

All Want Ads cash with order.

MISCELLANEOUS

BRUSH AND WEED KILLER

KILL SUBMERSED water weeds which foul up motor propellers, tangle fishing gear and choke irrigation ditches with R-H Granular Weed Rhap. Inexpensive, easy to use, sure results. For details write Reasor-Hill Corporation, Box 36CL, Jacksonville, Ark.

KILL BRUSH at low cost with amazing R-H Brush Rhap. Will not injure grasses, grains, cattle, or other animals. See your dealer, or write Reasor-Hill Corporation, Box 36CL, Jacksonville, Ark.

SAFE AND SURE!! MCPA SELECTIVE weed killer for seed, flax, small grains, rice. Safer than 2,4-D. Used as a pre- or post-emergence spray. Formulators and co-ops interested write for details. Aceto Chemical Co., Inc., 40-40 Lawrence St., Flushing 64, N. Y.

MACHINERY WANTED

WANTED USED MACHINERY—WE WANT a good used 327 St. Regis valve packer. Phone Morris, Illinois 609. Gilchrist Plant Food, 625 W. Washington St., Morris, Ill.

HELP WANTED

FERTILIZER SALES MANAGER — Established multi-plant fertilizer company, central states area, wishes to employ man 30 to 45 who has fertilizer sales experience for position of plant sales manager. Send background resume with recent photograph. All information confidential. Address Ad No. 4501, Croplife, Minneapolis 40, Minn.

MANUFACTURER'S REPS. AND SELLING AGENTS WANTED by eastern producer of outstanding anti-coagulant rodenticides, selling P.C.O.'s, agricultural formulators, chemical specialty manufacturers, food and grain processors, farm and poultry industry. Protected territories open in East, Middle Atlantic, New England, Southeast, Mid South, Southwest, Midwest, Central and West Coast. Inland Chemical Corp., 415 Lexington Ave., New York 17, N. Y.

Croplife Want Ads...
Get Results

Chemical Market Research Group Announces Officers

SAN FRANCISCO—The Western Chemical Market Research Group, San Francisco, announced its 1959 roster of officers:

Frederick B. Hilmer, chemical research, Shell Development Co., Emeryville, president; Robert Echols, product development, Oronite Chemical Co., San Francisco, vice president; Donald M. Patterson, Jr., market development department, Stauffer Chemical Co., San Francisco, secretary-treasurer.

fer Chemical Co., San Francisco, secretary-treasurer.

The WCMRG's 80 members represent a wide spectrum of West Coast business and industry, such as agricultural chemicals and others, pharmaceuticals, surface coatings, food products, metals and plastics.

Objectives of WCMRG are to present timely data on new chemicals and chemical markets with special emphasis on western U.S. consumption patterns, a spokesman said.

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American Potash Institute	Meredith Publishing Co.
Armour Fertilizer Works	Meyer, Wilson & Geo., & Co.
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15 16 17 18 19 20 21	15 16 17 18 19 20 21	12 13 14 15 16 17 18	10 11 12 13 14 15 16
22 23 24 25 26 27 28	22 23 24 25 26 27 28	19 20 21 22 23 24 25	17 18 19 20 21 22 23
	29 30 31	26 27 28 29 30	24 25 26 27 28 29 30
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S M T W T F S	S M T W T F S	S M T W T F S	S M T W T F S
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14 15 16 17 18 19 20	12 13 14 15 16 17 18	9 10 11 12 13 14 15	13 14 15 16 17 18 19
21 22 23 24 25 26 27	19 20 21 22 23 24 25	16 17 18 19 20 21 22	20 21 22 23 24 25 26
28 29 30	26 27 28 29 30 31	23 24 25 26 27 28 29	27 28 29 30
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OCTOBER	NOVEMBER	DECEMBER	JANUARY
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11 12 13 14 15 16 17	15 16 17 18 19 20 21	13 14 15 16 17 18 19	10 11 12 13 14 15 16
18 19 20 21 22 23 24	22 23 24 25 26 27 28	20 21 22 23 24 25 26	17 18 19 20 21 22 23
25 26 27 28 29 30 31	29 30	27 28 29 30 31	24 25 26 27 28 29 30
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HERCULES RESEARCH— First Step Toward Improved Pesticides

From the Hercules Research Center and Agricultural Chemicals Laboratories come an ever increasing number of products that contribute to more productive farming and increased comfort for leisure hours. Here are the established members of the Hercules family: *Toxaphene* agricultural insecticide; *Thanite*® for oil base and aerosol insecticides; *Delnav** phosphate pesticide; *meta Delphene*® insect repellent; *Delrad*® algicide.

Today in the laboratories research continues on the products that will join them in the future. But before they become available you can be sure that thousands of compounds have been carefully screened and extensive tests conducted in the field because only the best is good enough to meet the standards of Hercules research. That's why you can look to Hercules for leadership in the development of insecticides, fungicides, and herbicides.



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